

DECEMBER, 1877.



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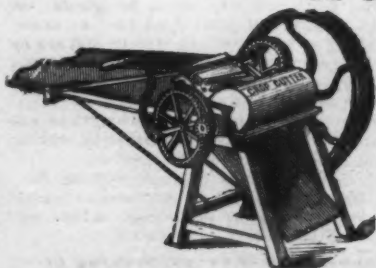
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# THE AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT  
"AGRICOLAS."  
Virg.

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

VOL. VI.—No. 12.]

DECEMBER, 1877.

[NEW SERIES.

## How does Plant-food Escape from the Cultivated Soil?

*Messrs. Editors American Farmer:*

I always read with interest and profit the reports of the Gunpowder Farmers' Club of Baltimore Co., because I have been among its members, seen their farms, and know they are among the most observant farmers.

They farm intelligently, and therefore scientifically. But it appears to me they do not claim enough for themselves. When a pretended scientist announces a proposition that they know to be erroneous, instead of characterizing it as too scientific, they would hit the right nail on the head by denouncing it as ignorance.—Genuine ignorance should be rebuked; genuine science, embraced, and applied to every human avocation.

In the secretary's report of October, of the Gunpowder Club, it appears that excellent farmer, my friend, T. T. Gorsuch, remarks that some people carry too much science into their farming, provoked by some one "professing to farm scientifically who wanted his manure to fire-fang."

Ignorance, and not science, dictates the sudden burning of stable manure, whether by fire or internal heat.

T. T. G. asks—"After manure is applied does its strength sink or evaporate?" And answers, "that he thinks little is lost by sinking; for example, in a garden where manure is used every year, the subsoil is as poor as anywhere else." N. R. Miles thought there may be loss both ways; he turns under and derives benefit; sometimes he derives no benefit from that applied on the surface. T. T. G. has had "the best to do no good, and bad to do best," and adds that "farmers grope in the dark, surrounded by mysteries." This is a wise and true conclusion.

Our advance is hastened by rays of light caught, here and there, by some of the vast throng, and communicated to his neighbor, who is thus lighted further on to something else, which he may communicate in return. This is the chief process in intelligent, practical agriculture, and furnishes the foundation, light, and stepping-stones of the hill of science.

Having profited from the published discussions of this club, I feel indebted, to the extent of my ability, to clear up any mystery that still "surrounds" them. I cannot dispel all, because many of them beset me, and I am in the dark about many things, where they have light.

The interchange is the propagation of scientific truths; the development of the true practice; whatever called, it is the same sure development of knowledge.

As to the question whether manures "sink or evaporate," the form of it and the answers lead me to fear that these are the only, or the chief, modes of loss recognized by the club. If so, they are in great error, for certainly these forces produce less than one-tenth of the loss.

A question of great importance is, "By what means does plant food escape and become lost from the soil?" As to how the great body goes, it could hardly be a subject of doubt with any farmer who has ever had the fortune, or misfortune, to be caught on a plowed field during a heavy rainfall, where he must have seen it running off in channels, (every furrow forming a rivulet,) *more rapidly than a hundred men could put it on.*

Yet, these farmers who feel a just contempt for ignorance, which they (doubtless in irony) call "too much science," seem to ignore the immense quantity of plant food they see annually rushing away beneath their feet; and ask by which of two *unseen* ways, for the most part imaginary, and requiring technical skill to discover, the most plant food is lost.

In general, the plant food, or strength of manure, applied to a soil, is lost neither by sinking nor evaporation, nor by both together.

It is said by writers of more learning than brains, that if we export no products, or import as much plant food as is absorbed in the crops sold off, fertility will be perpetuated.

### Exportation of Crops, Sinking or Evaporation.

Here, then, we have writers, on one hand, ascribing all the loss to the *exportation of crops*, and, it seems, practical farmers, on the other, assigning all, by implication at least, to *sinking or evaporation*; when in truth, it seems

to me, that far less than one-tenth of the loss results from all three of these causes together.

This deviation of public opinion from the facts is the more remarkable in this: that it requires chemical tests and much learning to discover the loss by either of the causes assigned by writers and practical farmers, when the real cause, wholly overlooked by them, that sweeps away more than nine-tenths, is apparent to the unaided eye of common observation during every rainfall.

This trait of the human mind is engendered by the enthusiasm of *discovery*. The charm that attends the investigation and teaching of hidden or mysterious phenomena, does not accompany the logic of self-evident truths. The philosopher could hardly expect the plaudits of the learned, or of the practical farmer, for announcing that the rains rapidly wash off the dirt from the plowed furrows. This fact is evident to the "way-faring man though a fool." Nor would there be much credit attached to the enunciation of that very first lesson in agriculture, that rain-water washes down plant food from the atmosphere, and dissolves it from the soil, and if the water concentrate in channels, so as rapidly to escape from the surface, it will carry off dissolved plant food as well as solid earth.

However ill-requited the task of pressing these plain matters, and however laudable the ambition to *discover* and teach what is hidden from common observation, we should beware of that degree of enthusiasm which leads to the ignoring, overlooking, or excluding, or denying of palpable facts, for the substitution and propagation of feeble, obscure and doubtful causes.

Manures containing free ammonia will lose some of it by exhalation; but the loss is so slight that advantages gained by surface application of even barn-yard manure, notwithstanding the tendency to wash, render it, in general, preferable to immediate incorporation in the soil. The reasons cannot here be enumerated. Plaster fixes volatile ammonia and prevents its exhalation.

Sulphate of ammonia, phosphoric acid, potash, lime, magnesia and sulphuric acid are never lost by exhalation or evaporation.

This excludes the whole list of plant food except only the volatile form of nitrogen, from any loss by evaporation.

Sinking, though sometimes a cause of loss, especially in lime turned under before assimilation into the soil, saves far more than it takes away. If the land be properly cultivated it saves the plant food of manures applied on the surface. It is therefore a potent agent for *retention* of plant food.

The best way to apply lime is in the finest possible state, on sod long enough preceding turning under for it to have disappeared from the surface and mingled in the soil. Then whether the soil be turned upside down or the sod turned on edge, the lime is assimilated alike in all parts of the soil. The lumps will remain on top and be turned under, in streaks or between the sods on edge; but they are of little value, and one who essays to mingle lumpy lime in the soil ought to lose it, and ought and will, finally, lose the soil.

When in the sunshine water is evaporating from the surface, the water from beneath is always coming up laden with lime and other plant food in solution. When the water *exhales*, the plant food is *deposited*: thus evaporation brings up food that would otherwise sink beyond the roots of plants, and sinking prevents its washing away from the surface.

#### Exhaustion of Soils.

I have never seen the subject of exhaustion usefully, intelligently, consistently or decently treated in any book. If any person has, I should like to know where the book is. My heart sorrows at the prospect of dying without the sight. But this, it may be hoped, is my own peculiar misfortune and shame; for if no such book exists, the shame is universal—a million times more than I can ever feel.

I believe the question of exhaustion to be of greater moment, especially to farmers in the old States, than any other.

Exportation of the crops,—the principal if not the only means assigned and elaborated by the writers,—in my opinion, does not take five pounds in one hundred of what the soil loses.

I do not think that sinking and evaporation take five per cent. of the loss away.

We will never find the bulk of escaped plant food in the marts, nor in the sub-soil, nor in the air; but remote generations may find it in the deltas, bays, gulfs and seas, to which it has been propelled, for the most part, by ignorant and destructive modes of cultivation.

As in ages past, the great bodies of water will abandon their present beds and occupy exhausted fields, future generations will plow the beds of present seas, as we, now, the fertile deposits of ancient waters.

But we cannot await the reversion. We must find plant food where accessible, and incorporate it in our depleted soils. We must so cultivate as to restrain the washing away in solution or in solid form,—the chief features of which are thorough drainage and deep and level cultivation. Deep furrows should be avoided as much as possible. These as well as creeks and rivers draw the surface water together, creating a velocity and power almost unknown on level surfaces, and like the creeks and rivers, wash away the loam, and in time penetrate to the gravel and clay, starting all above on the way to the sea.

In this way furrows exhaust the soil more rapidly than all other agencies together. In general, with few exceptional sub-soils and also disturbance of plant roots, the deepest cultivation is best. Not that the sub-soil should be turned up, if poorer than the surface.

We can cultivate the soil without turning it upside down, or creating rivulets all over it. The deeper the porosity, the less will the plant food wash from the surface. If it penetrates deeply, evaporation will bring the most of it back; if it wash away, no natural force will ever bring it back.

A deeply porous soil, levelly cultivated, will absorb most of the water of ordinary rainfalls and pass it off slowly, carrying almost no plant food away in solid form and very little in solution; while the ammonia, washed from the atmosphere, instead of rapidly running off in

channels, will be absorbed and deposited in the soil.

The example of failure to sink into a compact sub-soil, given by T. T. Gorsuch, in his garden, is confirmed by my own observations. I have a barn-yard that has been used as such for a hundred years. It rests on compact red clay. The clay has not been darkened by deposits from the manures for a century, to the depth of three inches. It was washed or hauled away. Doubtless, if the clay were rendered porous by plowing, and not trampled solid, it would absorb liquid manure to saturation and become rich. If porosity extended three feet, it would take in nearly all the water falling on it with dissolved plant food, which would be brought up and deposited at the surface by the influence of evaporation in the sunshine.

#### Necessary Plant Food.

We do "grope in the dark," not because we do not know what substances a plant needs for food from the soil: they are few and well known. But we do not often know what elements of food exist in certain forms or preparations of manures, nor their proportions or quantity, nor which of these already abound in the soil, nor in what condition they exist there.

No manure, in reference to the needs of various soils, is "best" or "worst." The best for this soil and this time may be the worst for another soil, or even for the same soil at another time. The value of a manure, to the soil, is in proportion to the absence of its ingredients from the soil at the time of its application. Additions of ammonia or potash may be not only worthless but injurious to the crop, and always wasteful when they abound sufficiently in the soil. Their value to a certain soil at a certain time has no relation to their commercial value. The commercial value is governed by their scarcity in the markets, while the agricultural value depends on their scarcity in the soil to which they are applied.

If a corn or wheat plant is to be grown in earth already containing sufficient ammonia and no lime, then lime is a cheaper manure for that soil at twenty-five cents per pound than ammonia at the same price.

We may grow as perfect a corn or wheat plant with its roots in water, containing necessary food for soil, under proper conditions, as in the ground. If we essay to do this with sufficient ammonia, phosphoric acid, potash, magnesia, sulphuric acid and iron, we cannot make a perfect plant. By the addition of these expensive substances we may only kill the plant, but the addition of a proper quantity of lime, without more of the others, will make a perfect plant. So here is a case in which a little lime is worth more than all other food, and the addition of the others is worse than worthless.

I planted alternate rows of potatoes in a loose garden soil, applying ashes in one, ashes and lime in another, lime alone in another, and nothing to another. The rows with ashes alone and with ashes and lime, produced less than the soil simple. That with lime alone produced the same as that with nothing.

This did not prove that ashes, nor ashes and lime, are not good fertilizers in general, nor that

lime is worthless; but only that they were worthless, and the ashes injurious, to that soil at that time, for the reasons already stated, and perhaps the additional reason that the ashes rendered the soil still lighter, which was already sufficiently light.

The best manures, in reference to the needs of the soil, *always* do best, and the worst *always* do worst. In reference to commercial value, it is precisely as T. T. G. states: the most valuable sometimes does worst and the least valuable best.

#### Analyzing Soils.

How shall we ascertain what manure is best, or what the soil needs? We have been told to analyze the manure and the soil. But to analyze the soil is worse than folly. Ascertain just as I did in reference to ashes and lime. No other way is known under heaven.

There is no royal scientific road to a knowledge of the secrets that God, in inscrutable wisdom, decreed shall be sought by labor and trials and disappointments.

Science is the expression of the results of experience, and no experience ever yet demonstrated that chemical examination of lumps of earth from a field discovers what is necessary to apply to the field for the growth of plants. All experience teaches that the plants, and they only, can impart the knowledge. If the chemist could examine all the earth of the field to the full depth to which the roots penetrate, he might approximate the percentage of the various sorts of plant-food it contains; but still his tests would fail to reveal the condition in which the plant-roots will find them.

The plants alone can reveal the truth as to what exists in available condition. Their growth and death is their only language intelligible to us. We must therefore try this, that, and the other, and note the various responses in the growth, vigor and weight of the crops, as a physician tries various preparations of food with emaciated patients. Not science, nor the physician, nor the patient, can foretell the result, but the stomach responds in truth. The doctor may guess better than unskilled persons; so, a chemist, or intelligent farmer, may guess better, and have fewer experiments to try, than unskilled persons or fools. But under our present state of knowledge they can only expedite the practical processes, through which only the truth can be reached.

If anything thus hastily thrown together, away from home and books, should shed light on the perplexities and darkness of which T. T. G. complains, and which we suffer in common, then I shall be glad to have contributed my humble mite in return for the light often received through the published reports of the Gunpowder Farmers' Club.

L. H. MCGINNIS.

#### Applying Manures.

Messrs. Editors American Farmer:

I have been reading with much interest the discussion on the proper application of manures, by the Gunpowder Club. As shown by the views of the members, much can be said on both sides of the question. So much depends on the quality of the land and the condition of the manure

at the time of putting out; also what crops are to follow. I have about 200 acres under cultivation. There is on this tract of land every kind of soil, from stiff clay to almost clear sandy alluvium,—the latter so light that a strong 2-horse plow runs nearly to the beam. When I came into this county some twenty years ago, hardly knowing which end of a plow went first, I relied on my neighbors for information. At that time the invariable practice was to plow all manure under. I continued in the same way until I found, by a test that I was forced into, that the rule was not always to be followed. I had a field of about 12 acres, timothy sod, sandy loam, and part pretty stiff. I wished to put it in corn; and commenced to haul manure on the sod and plow under in the spring. By the time I had half the field plowed the plow had caught up to the team that was hauling out manure. My man wished to stop the plow until the manure was hauled; but as the season was advancing I kept the plow going, and spread the manure on the fresh plowed land. Having some distance to haul the manure, the whole field was plowed, harrowed, and the corn planted before the whole was covered with manure. There was probably two acres that had no manure on it when the corn was planted. On this I spread such manure as would not interfere with working the corn. When the corn came up the four acres on which the manure was spread on the plowed ground took the lead and kept it; the two acres on which the manure was spread last was next best; and the corn where the manure was plowed under came last. I do not know how many barrels to the acre the field yielded, but I weighed into my mill something short of 800 bushels of corn,—a trifle over 13 barrels to the acre, and 5 bushels to the barrel. I am sure the land on which the manure was harrowed in produced at least from three to four barrels more to the acre than the others. The great advantage was in the start. The young roots found their food soon and the corn got an early start, and was earlier and better worked, and its roots were into the sod before the summer drouths came on.

Since then I have adopted the following rule with regard to manure: To keep it as near the surface as possible. The greater part of my manure goes on my grass land, and I haul it out and spread it whenever I have time, even if it is only a few loads. I manage to get all my manure out in April, either on my corn or other crops. Any that may accumulate between May and August I spread on the poor parts of my grass land after cutting, and do the same through the winter months.

When I can haul, like many of the Gunpowder Club I am not sure that, with the high price of labor, it pays to make compost heaps.—Of course, circumstances alter cases. If a farmer has a piece of rich bog land, he can cut open ditches, and convert an unprofitable swamp into good land and utilize the muck.

The following rotation I find to succeed well with me: Starting with a sod for corn, plow in the fall if possible, and put manure on through the winter. I follow the corn with oats, and set to clover; which never fails with me with oats.

I cut the clover the first year. The second I pasture until July, and plow under in September for wheat, and haul out any manure I may have on the poor places. I always sow timothy with my wheat; also put clover on in the spring, 1 bushel to 8 acres. I keep it in timothy about two years and then put the sod under again for corn. The only manure that I do not haul out as soon as I can is corn-stalks, and I do not see very great value in them, except as an absorbent in the stable-yard. C. H. S.

Harford Co., Md.

### The Farmers' Bank.

*Editors American Farmer:*

Manures are plant food, and are of various kinds,—natural and artificial. Their names are legion, with their analysis and composition, including a long string of hard names, and no two of them exactly alike. It has been said lately that horse manure is the most perfect for many reasons. I am inclined to think so too. I have known it longest and tried it in days of yore; the most that could be said against it, there is not enough of it.

I have seen it used in various ways on wheat: 1st, spread on the ground and plowed under. 2d, put in the hill with the corn; put on the hill after the corn was planted and covered. It paid every way. Farmers' experiences have differed, and seasons have much to do with it. The manures made by cattle wintered on straw and fodder are good, but better if they are fed with meal or grain at the same time. Mr. C. used to have a supply or stack of straw, where he fed his fattening hogs, and they worked it up into a fine compost by the time they were fit to kill. Sheep droppings are good on pastures, or when they are fed with grain and hay. Materials for composts obtained from privies, wood-piles, scrapings of roads and washings and earths from low grounds, interspersed with urine, decomposed vegetable matters, &c., mixed with leached ashes and plaster; some covering of straw, &c., would protect it. The above will pay for the time and labor used on it, as well as money invested in gold or other metallic diggings. Of the guanos, compound and commercial fertilizers, we will not pretend to enumerate. This much might be said in their praise—they may be handled cheaper than home-made manures, and their effects quicker, though perhaps not so lasting. If by these or other means a stand of clover be obtained, you are in the right direction for crops and profit. It might seem extravagant, but judiciously used all are good, singly or combined. Success is the aim; judgment and labor, with the proper outlay, the means. It is said Providence helps those who help themselves. So good fortune is in the power of every one, sickness and accidents excepted.

P. S.—I cannot too much praise you and the gentlemen associated with you for your efforts in behalf of an Agricultural College, pure and simple, in the State of Maryland. The farmers are an industrious, sound, patriotic class of citizens. Their wants should be attended to, and every farmer's son should have the chance for an enlarged education in his calling. Other



States have flourishing institutions of the kind, and it would be scandalous if young Marylanders would have to go out of the State to learn the science and practice of agriculture. Her position is central and her lands are good and improvable. Marylanders should be proud of their State, and should have an Agricultural College on a level with those of other States and the world. Let the farmers to a man do their duty in this matter,—the people will be with them. *Vox populi vox Dei.* PHILO.

### The Hessian Fly.

From almost every direction we hear of the damage done by this pest of the wheat plant, and a serious calamity threatens the crop unless some effective mode is found of remedying the injury already done, and which threatens to be still greater in the spring.

Doubtless most of our readers are but too familiar with the appearance and habits of this insect; but as a reminder to such, and for the benefit of those who have no experience with it, we give from one of the best authorities some notes concerning its appearance and habits. Prof. Cyrus Thomas, State Entomologist of Illinois, thus describes the insect; a cut of the female of which we annex to the description:



Fig. 1.

The insect, in its perfect state, is a little gnat resembling somewhat a mosquito, but is much smaller, its length being only about one-tenth of an inch. The genus or group to which it and several other closely allied species belong is characterized thus: The antennae are usually about as long as the insect, composed of from fourteen to seventeen beads like joints, each furnished with a whorl of hairs, the former being globular, the latter oval; the wings have three nerves and are ciliated or fringed; the joints of the feet are short.

The characters of this species are as follows: The female (Fig. 1) has the head black; antennae rather more than half as long as the body and composed of sixteen oval joints, each furnished with a whorl of minute hairs, the terminal joint the longest. The thorax or middle body, oval, broadest behind, black; poisers dusky; abdomen black above, the sutures pale tawny or yellowish; the ovipositor reddish or rose-colored. Wings dusky; somewhat pale at the base. Legs equal, pale brownish, tarsi black. The male has the antennae nearly as long as the body, with globular joints very distinctly separated from each other. Abdomen brownish black, cylindrical, seven-jointed and slightly tapering, the tip armed with two processes having curved hooks at their tips.

The general appearance of these insects is black or blackish, the abdomen being sometimes (as in the male) brownish, marked with black on each segment.

The species produce two broods during the season—the perfect insects or flies appearing first in the spring, earlier or later, according to latitude, and then in autumn. According to Dr. Harris, the transformation of some of each brood is retarded beyond the usual time, so that the life of these individuals, from the egg to the winged state, extends to a year or more in length, whereby the continuation of the species in after years is made more certain. This, I think, is more likely to occur in northern than in southern latitudes. In Illinois the flies usually appear in September, remaining only a short time—a week, or two or three at most. Having paired, the female deposits her eggs on the young wheat plants where the wheat has been sown sufficiently early for it to be above ground, depositing them on the upper side of the blades. These hatch in a few days—usually in four or five days or a week, according to the temperature of the weather. When the little maggots first appear they are of a pale, reddish color. They at once make their way down the leaf, (fig. 2) between it and the stem until they come to a joint, immediately above which they stop and take up their permanent abode. Here they fix themselves lengthwise upon the stem, being nourished by the sap, which they take by suction. According to Harris, “they soon lose their reddish color, turn pale and marked with whitish spots, and through their transparent skins a greenish stripe may be seen in the middle of their bodies.” In a few weeks, or by the time winter has fairly set in, the skin commences to harden and ultimately changes to a chestnut color.



Fig. 2.



Fig. 3.



Fig. 4.

It is now in what is usually and appropriately termed the “flaxseed state,” (figs. 3, 4.) Without entering into discussion concerning the nature and formation of this flaxseed state, it will be sufficient to state that it remains in it until spring, undergoing the transformation which produces the fly (which comes forth usually in April,) varying according to latitude and the temperature. These having paired, the females deposit their eggs on the wheat, from which the summer brood is produced. By the time the wheat is ready for harvesting this brood is in the flaxseed state, and, as they usually congregate on the stalks around the joints near the ground, they remain in the stubble after the wheat is cut. By this means they are enabled to pass over from the maturing to the new crop where winter

wheat is sown in time to be above the ground before the flies have disappeared.

In the spring-wheat region by reasonable care the pest may be counteracted by burning the stubble immediately after harvest for two or three seasons, and refraining from planting any other winter crops in which they can hibernate will certainly eradicate them. But he adds:

"Where winter wheat is chiefly raised the remedy is rather more difficult; but here also burning the stubble immediately after harvest is undoubtedly one of the best remedies; but to be effectual it must be done by all the farmers in the infested district. When burning is resorted to it is best to leave the stubble as high as possible in order to be certain that the insects remain in it.

A second remedy is to delay sowing to as late a period as possible, in order that the flies may die off before the wheat appears above ground. The date, as a matter of course, will depend upon the latitude.

Another remedy, and the only one which can be adopted for the winter wheat which has already been sown, is to pasture it, especially with sheep where this can be done, as they clip it so close as to eat the insects with the stems on which they are located.

As these remedies are in the reach of every farmer, it only requires combined effort to eradicate this pest. But so long as farmers neglect or refuse to take agricultural periodicals from which they may learn the habits of their insect enemies and the best methods of contending with them, such complaints as those coming up the present season will be repeated. One of the first objects of granges, agricultural clubs and societies should be to put into the hands of their members some good agricultural paper or periodical. As a matter of course, the very ones for which such remarks as this are intended will fail to see it unless those who receive the papers press the importance of this matter upon their neighbor farmers. If our farmers would take the same interest in obtaining information in reference to their own direct calling as they do to elections and political matters, the farm products of our State would be increased millions of dollars each year."

#### Remedy for Fly in Wheat.

Col. Frank G. Ruffin sends to the Richmond *Dispatch* the following recommendation, which has heretofore been made by him through our own pages, of the sowing of slaked lime over the wheat fields:

I hear there is much "fly" in the wheat that was sowed early this fall. To correct this evil I offer the following remedy, which I and others have successfully tested for a good many seasons: Sow of air-slaked, or water-slaked, lime one to two bushels per acre broadcast over the wheat in the early morning on the dew, or over night on a clear evening, when there is reason to expect dew or frost. As it dissolves it will form a lye which will follow the leaf towards the root, and destroy the egg or chrysalis of the fly near that point.

The sower must always sow with the wind, else the lime will be blown back into his face and eyes and on his clothes. And he must grease his hands, face and nostrils with lard, which renders contact with the lime innocuous. If two or more sow they should sow *en echelon*, at such a distance that the rear shall cast no lime on the front.

A very good, but not indispensable, plan is to use tea-scoops—diminutive sugar-scoops—that will hold a double-handful. It enables one better to take up and measure the quantity to be applied.

This is an application so simple and cheap as to discredit it with the many who are often looking to be told "some great thing." I can only say that I know it to be effectual as a remedy, and that in no case can it do any harm.

As we make now in all of cismontane Virginia not more than, if as much as, one-tenth of the wheat we made before the war, it would seem that we ought to take pains to get all we can from what we sow.

Col. R. has heretofore recommended sowing the lime in November and April—considering the latter, however, the most favorable time.

#### Clover and Clover Seed.

A correspondent of *The American Cultivator*, writing from Western New York, a section of country which has been very much improved, agriculturally, in the past quarter century, and largely by the use of clover, says:

The best mode of utilizing clover becomes the central question in agricultural improvement. Whether it shall be plowed under, pastured or mown; whether it shall be turned under the year after being sown, or left to perfect its seed; whether it shall be sown alone, or with some small grain crop. These are questions affecting vitally the prosperity of the farming population. The farmers of Western New York, having long been foremost in wheat production, easily learned to use clover as its best auxiliary. With the progress of years they have learned experimentally the best modes of using clover. Forty years ago plowing under clover when in full blossom was the standard method. Wheat then was the staple crop and almost the only one which sold for money. A few cows to supply the family with milk and butter; hogs enough to fill the pork barrel and pay the taxes, and horses to work the farm, were almost the only stock kept on some of the largest and most successful wheat farms. The manure to make the wheat crop was furnished almost exclusively by the clover plowed under the previous season. Since the introduction of mixed husbandry this system has been greatly changed. More stock is kept; more reliance is placed on manure; artificial fertilizers are more largely used each year, and there is comparatively little Summer fallowing and plowing under of clover.

There can be no doubt that this system of mixed farming is more profitable, not only in the money value of crops sold, but vastly more so in the increase of fertility of the soil. There is



greater certainty also for the farmer. He does not have all his eggs in one basket, and a bad season does not leave him with receipts running far behind his inevitable expenses. The weather that is bad for one crop is favorable for others, and he has always a reasonable certainty of having something to sell. Of late years shrewd farmers have learned to carry the system of mixed husbandry a step farther, and add clover seed to their list of available crops. Eight or ten to fifty or seventy-five bushels of clover seed, as grown on many farms every year, are a valuable addition to the farm receipts for the year. The money thus secured is made quite as easily as any which the farmer receives, and I believe it is made not only without injury but with positive benefit to the soil, at least to its productive capacity. The farmers who grow clover seed are the men who become rich, for every year their fields become more fertile. The shade which the clover-leaves during the heats of Summer furnish to the ground increases the nitrogen which it holds, while the clover roots perform the equally beneficial operation of permeating the subsoil and bringing up the unavailable fertility from beneath, and making it available.

These advantages are, to some extent, incident to the use of clover in any way. But the farmer, who grows clover seed, shades and mulches his soil more perfectly, and secures a stronger and deeper growth of root than if the plant is pastured or is plowed under at any earlier period. There is a further and very important advantage in growing clover seed. He who has seed to buy sows sparingly. He who grows it can afford to sow liberally. Not less than one peck per acre should be sown. After a few years' growing of clover seed the ground will be filled with the seed, which will spring up, in after years, as they are turned to the surface. Two years ago one of my neighbors plowed a field in the Fall, after taking off a clover-seed crop. Barley was sown in the Spring, and a good crop, about thirty bushels per acre, was grown. The field was then plowed and sown with wheat, and though the farmer did not sow a quart of clover seed, he has as good a "catch" as any one could wish. Enough seed was wasted to seed the ground, and, as the field was only lightly cultivated in the Spring for barley, the seed was never turned up until plowed for wheat. I do not advise trusting to such chance seeding as this. Better sow the field as usual, and let the volunteer clover come in as extra to give the soil a closer mat and a heavier growth. The farmer who sows clover seed, for a few years, will find it profitable far beyond the money value of the seed which he sells.

#### Root Crops—Meat-Producing.

Joseph Harris in his Talks about crops in the *American Agriculturist* has the following:

Mangel wurzel will be the great root crop of the United States. It will stand our hot summers better than Swedish turnips, and, if the land is rich enough, will produce a far larger amount of nutriment per acre. Mangels will keep longer, and become more valuable the

longer they are kept; they are worth more in April and May than in the winter.

"You mean by that," said the doctor, "that you can use them at that time to better advantage."

"Not only that," said I, "but the mangels themselves are more nutritious. They contain less water, and more sugar, as they become 'riper.' By keeping them in a warm cellar, you can ripen them in January and February; but if pitted in the field, or kept in a cool cellar, they are not in their prime before the middle of March. And at this time they are of great value for ewes and lambs, or for milch cows, or breeding sows."

"No doubt they are valuable," said the Doctor; "the trouble is to grow them. My seed this year did not more than half come up, and I have a thin crop—but what I have are good. I sometimes think it would pay to raise them merely for their leaves. There is nothing my little pigs like better."

The great mistake we all make in raising mangels is in not getting the land ready the fall previous. We ought to plow the land in August, and again in September or October, and between the plowings harrow and cultivate, to kill surface weeds. If the land is a strong loam, I would, in this climate, apply the manure in the fall, (the earlier the better,) and work it thoroughly into the soil, and in November I would plow the land, and get it all ready for planting in the spring—of course, doing the work only when the land was dry.

Had I adopted this plan last fall, it would have been several hundred dollars in my pocket. I plowed my land last fall, but did not manure it, and this spring I had to plow it, and then ridge it, and spread the manure in the ridges, and cover them. Our springs are too short for this kind of work. I did not—and could not—get at the mangel land, until we were through sowing barley and planting potatoes and corn, and when we got ready to plant the mangels the ground was so dry that much of the seed failed to germinate. The longer I farm the more I am satisfied that we must prepare our land for spring crops in the fall.

"When I was in England," said the Doctor, "I asked an intelligent farmer what he considered the greatest improvement that had taken place in English agriculture during the last half century. He replied, 'the steam scarifier, and the use of artificial manures.' He did not think steam was so much cheaper than horses, but it did the work quicker and better. As soon as a crop was off, the stubble could be scarified, or, as we would say, cultivated. The light lands could be sown to late turnips, or rape, or mustard, and the heavy lands could be worked and got ready for spring crops. 'Autumnal cultivation,' he said, 'had done great things for English agriculture. That and the use of artificial fertilizers had greatly increased the production of root crops—and the more roots, the more stock; the more stock, the more manure; and the more manure, the more grain.'"

"And yet," said I, "there is not half the necessity for autumnal cultivation in England as there is here. Our autumns are longer and drier than in England, and the land in better condition to work. And our springs are later and shorter,

and if we get only a few days behind with our work, a drouth sets in, and we lose half our crop."

Even admitting that the mangels themselves do not bring in any money, and that they require considerable labor and manure, their general effect on the farm is good—and, in short, they pay.

And corn-fodder will pay and cabbage will pay. These enable us to keep more stock and to make more manure. It looks now as though we should get a good price for our grain another season, and I think we shall do well to sow and plant largely. At the same time the prospects for the stock-raiser are no less encouraging. The fact that we can ship fresh beef, and mutton, and pork, and poultry, to Europe, will have a great influence on our system of farming. It will give us a steadier market for live stock, and better prices for improved stock. We shall be able to feed better and manure more. It looks now as though for the remainder of this century, America is destined to be the great meat-producing country of the world. And in talking about farm crops this fact must be borne in mind. We shall use, especially in the Eastern, Middle, and Southern States, a large amount of artificial manures, and they will be used more and more for growing crops to be fed out on the farm. The supply of good beef and good mutton will come from the cultivated and well-farmed sections of the country. The meat-eating people of the world are increasing with marvelous rapidity, and they will not be fed on game or semi-wild animals that have to use the food they eat in summer to store up fat to keep them alive in winter. It requires an enormous amount of grass to produce a five-year-old buffalo, and not much less to produce a thousand-pound Texan steer. We must have improved animals and improved modes of feeding. We must supply our animals with abundance of nutritious and easily-digested food, winter and summer, and this can only be done in the cultivated sections of the country, and by improved methods of farming. Let us be encouraged to push forward the good work with vigor. Let us underdrain, let us kill weeds, let us manure, and let us raise larger crops, and feed out a greater proportion on the farm. This is to be the improved American agriculture of the future. We could hope for no better prospect.

The details of the system will depend on circumstances, and may well be left to the intelligence of our thinking, working farmers. All that is needed is a conviction that improved farming will pay—and I think we need have no doubt on that point.

#### Salt as a Fertilizer.

The heaviest application of salt as a fertilizer that we ever remember hearing of, is related by the editor of the *Michigan Farmer*. A Mr. William Smith, residing near Detroit, ordered a car-load of refuse salt from the salt works, intending to spread it as an experiment upon one hundred acres of land, but by a mistake of the hired man, the whole ten tons were applied, in Mr. Smith's absence, to ten acres, or a ton to the acre. The land was a sandy loam, two feet deep, overly-

ing a stiff clay subsoil, and was thoroughly drained with tiles. The field on which the salt was spread had recently been seeded with winter rye and timothy seed. The water from the drains was so salt during the next few months as to be unfit for drinking; but in spite of the application, and contrary to the expectations of Mr. Smith and his hired man, both rye and timothy survived and made full crops, although the rye was retarded somewhat in its growth. Clover seed was sowed and harrowed in, in the spring following, and during that season and the next very heavy crops of grass were taken off—over three tons were taken off—3½ by estimate. The field was also remarkably free from all descriptions of insects—neither grub, wire-worm, earth-worm or maggot could be found, and even grasshoppers seemed to have all been destroyed or repulsed, for none were to be seen. What may be the future effects of this enormous application of salt still remains to be seen. Probably on land less sandy or poorly underdrained, so much salt would have proved fatal to every green thing. As it was, it becomes a question, whether the refuse salt from the salt works may not have a value for agricultural purposes much greater than has generally been supposed.

#### Perennial Grasses and Annual Grains.

The venerable Dr. Daniel Lee says: "Southerners have yet to learn the true worth of perennial grass as compared with grain, roots, cotton and tobacco. Men have as much capital to raise grass that grows from 10 to 20 and from 20 to 50 years without any plowing, like Bermuda and bluegrass, as they have to raise yearly crops of corn, wheat and cotton which require a great deal of tillage, implying the feeding of work animals and the repair or replacement of plows, horse-hoes and hand-hoes, reapers and thrashing-machines. Let the thoughtful reader answer this question: Why do the intelligent people of Great Britain keep so large part of their arable land in perennial grass, in permanent pastures and meadows, and at the same time import over 100,000,000 bushels of wheat, corn, barley and oats a year? They often grow as much wheat on one acre as we do on four or five.

Yet, with all our shrewdness, we fail to learn the lesson that grass pays better with a high price of wheat than wheat as an annual plant.

Not to do injustice to Southern agriculture, we remark that over 30 years ago the writer delivered agricultural addresses in the famous Connecticut valley about the city of Springfield, and while he found a few farmers cutting five tons of good hay per acre at two mowings on irrigated river and creek bottoms, a majority of the cultivators believed on pushing the plow to the neglect of grass culture about the same as Tennessee farmers do. Speaking of the soil of Essex county, Mass., Mr. Geo. B. Loring says: 'I remember one of the records kept in this county less than a century ago, in which it was stated that under the ordinary cultivation of the soil 750 bushels of potatoes had been raised on an acre of land.' This was common doings. Now it takes a full supply of manure to raise 100 bushels on the same acre that produced 750

bushels. More than half of the whole ash obtained in burning clean Irish potatoes is potash, and if these tubers are annually consumed in Boston and other cities, and the residuum thrown as waste matter into the rivers and sea, how shall this wasted potash remain in the soil or on the farm to organize more starch and large crops of potatoes?"

### The Virginia Fair.

Dr. Geo. B. Loring, a member of Congress from Massachusetts, and long and perhaps still President of the New England Agricultural Society, accompanied President Hayes and his party in their visit to Richmond during the recent exhibition of the Virginia State Society, and in a letter written to his constituents he thus describes the impression produced upon him by the display there made:

As an illustration of the material condition of the State, the fair was most interesting and encouraging. I have been for many years a close observer of the industrial products collected on such occasions, and I have never witnessed more striking evidences of agricultural and mechanical skill and thrift. The cattle were of the highest order—the Shorthorns, which always stand first on the list, being represented by animals not easily surpassed either in this country or in England; and the Devons and Jerseys, many of which were imported, being of the best quality. I have not seen so good a display of Southdowns and Cotswolds for years, nor of the many breeds of swine. The collection of draft and driving horses surprised me. Fresh from that splendid exhibition of eastern horses at Portland, Maine, of the New England fair in September last, I was not prepared for a successful rivalry at a single State show. But I must acknowledge that in well-balanced, well-bred, strong and powerful roadsters, Virginia stands as near the head at least as New England, and in the matter of heavy draft horses a little nearer. The exhibition of implements of husbandry indicated that the manufacturers found a good market in Virginia. And the crops indicated that the farmers found a good soil. To witness this exhibition there were gathered on the grounds the second day more than thirty thousand people, neat, orderly, and apparently prosperous. At the rates charged for admission they had paid into the funds of the Society more than fifteen thousand dollars, and the value of the exhibition itself was undoubtedly more than two hundred thousand. The exhibitors and officers were among the largest landholders and farmers of the State; and I have nowhere witnessed a more thorough and substantial representation of the business of agriculture, as among the great industries of the world, than I witnessed in the exhibition itself, and in the character of those who had collected it from their large and prosperous farms, and had come together to sit in judgment on its merit and value. I have been somewhat particular in describing this exhibition, because I think it is entitled to careful consideration, as illustrating that industrial prosperity in which I am sure Virginia is bound to be conspicuous.

### Agricultural Show in Cecil.

The Cecil County Farmers' Club, one of the most intelligent and advanced farmers' associations in Maryland, held a one day's show of farm stock and products, on the 14th ultimo, on the farm of Mr. Adam R. Magraw. From the report in the *Whig* we take the following:

Some two or three hundred persons were in attendance, mostly gentlemen. The main feature of the fair was the display of stock. Durhams appeared to be the favorite breed. Those deserving special mention were exhibited by John P. Evans, who showed a handsome pair of large oxen and several fine heifers. William Preston, one cow and a fine group of young cattle. Wm. W. Moore, a very fine pair of young oxen, of Devon stock. Wm. R. Cooley also exhibited a nice pair of oxen. Duyckincks, of the Ninth district, had the honor of exhibiting the heaviest cattle of the collection. They tipped the scales at forty-hundred; work oxen, six years old. We saw two other pairs of fine oxen, but failed to learn the names of the owners. Joseph Lincoln and Wm. Terry also had some fine young cattle, Durhams. A number of horses and colts; also, sheep, both Cotswold and Southdowns, were to be seen. Adam R. Magraw, Esq., on whose farm the fair was held, had on exhibition some fine specimens of wheat, corn and timothy seed. Miss Golibart brought some very neatly arranged butter, which looked pretty enough to tempt the appetite of an epicure. Jos. Balderston brought some beautiful Brahma chickens; Thomas Waring showed some Gray Cochins, of fine proportions and general symmetry.

A. R. Magraw showed some handsome swine of the Berkshire variety.

The farm of A. R. Magraw is one of the most highly improved in the upper part of the county. The elegant buildings are surrounded by tastefully ornamented grounds. A neat farmer's cottage stands near the mansion of the owner, and on the western slope of the lawn is situated the new and commodious dairy room, with all the modern appliances for making superior butter.

Mr. Magraw received his education in Europe, where he had ample opportunity to study the science of agriculture as practiced in the Old World. To this noble pursuit Mr. Magraw has devoted means and leisure.

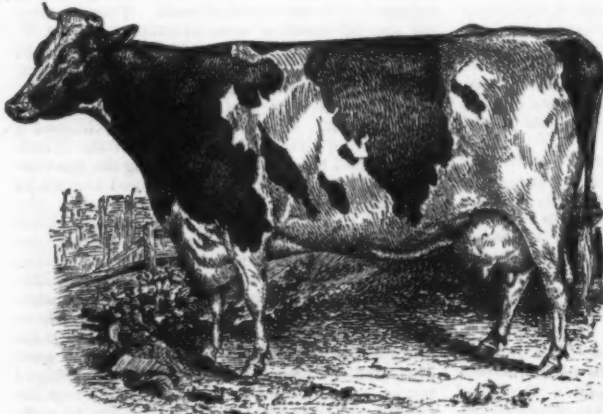
It is to be hoped that the fair may be repeated in the future, and the ladies be invited to participate more largely.

### Exports to Europe.

Six steamers from New York for Europe, in one day last month, took out 109,000 bushels of wheat, 23,500 bushels peas, 61,000 bushels corn, 23,000 bushels barley, 7,000 bushels rye, 14,000 boxes of cheese, 3,600 boxes bacon, 4,000 barrels flour, 1,850 bales cotton, 1,550 barrels apples, 320 packages butter, 520 barrels oysters, 1,500 bags coffee, 3,900 cases canned meats, 1,000 bales hops, 50 tons leather, 140 tons fresh beef, 107 tierces beef, 995 bales, 66 hogsheds, 310 cases tobacco, 250 puncheons syrups and 200 tons produce.

## Dutch Cattle.

Whether the animals of the celebrated milk-producing breed introduced into this country from Holland were properly to be styled Holstein or Dutch cattle has long been discussed. The *American Dairyman* now says some are of the opinion that there exist at least three families of black and white cattle in Holland of which importations have been made into this country; these being the Belters, the Black White-Heads and the Black Variegated. The *Dairyman* gives an account of a herd of the last-named family belonging to the Unadilla Valley Stock-Breeders' Association, near Utica, N. Y., and under the charge of Mr. S. Hoxie. We make some extracts from this account, as showing the characteristics and merits of this race. We also give an engraving of one of the cows of the Association's herd.



HOLLAND COW, property of Unadilla Valley Stock-Breeders' Association.

with one exception, have proved remarkable milkers; and their offspring as yet show no signs of degeneracy. They are as straight and fine of limb, and preserve the color and texture of the hair as perfectly as they appear in the imported animals. The importations of Mr. Whiting constitute the herd of which we are writing.

The reliance of the Unadilla Valley Stock-Breeders' Association is on Burgomaster, who gives satisfactory evidence of prepotency. He has all the signs of descent from a good milking family strongly marked, and the aim of the Association is to develop all possible excellencies without in any degree sacrificing the flow of milk. The standard is not yet finally fixed; but Mr. Hoxie favors substantially the following:

1. *Color*—An equal amount of black and white, the latter prevailing on the limbs, over the shoulders and across the hips, with a white spot in the face, a white throat-piece, and the lower part of the tail white. If either, he prefers that the white should predominate over the black.
2. *Size*—Medium size, or a cow weighing about 1,200 when in flesh, is thought preferable. An animal of average size is better fitted for all parts of our country, and more especially the milk-producing districts. A good authority has expressed the opinion that importers have made a mistake in selecting the largest-sized animals from the Dutch herds.
3. *Form*—The one recognized as the milk form, narrowing forward and widening backward, not only sidewise but perpendicularly, giving low shoulders and high rump—but the lungs and vigor of constitution must not be sacrificed to this form. The straight back and level hips—indeed all the straight lines of the Short-horn that do not involve sacrifice of milk—are desirable.
4. *Limbs*—Lightness and cleanness of limb, which is a distinguishing mark of the thoroughbred, and is a characteristic of this herd, should be aimed at.
5. *Handling*—When a good judge grasps the skin just back of the shoulders, he looks not for thinness, but for softness. In this respect Burgomaster has been pronounced superior.
6. *Milk Marks*—Perfection of escutcheon, milk-veins, milk-holes, udder and teats, is a *sine qua non*. Richness as well as quantity of milk should be well looked to, and monthly tests made of each cow to serve as a guide.
7. *Disposition*—Docility, quietness and intelligence are all-important. A cow that converts an undue amount of her food into nervous energy, is not fit for the dairy. The maximum amount should go to milk in the milking season, and to beef when not in milk. But health and vigor of constitution must not be sacrificed. The present herd is remarkable for its docility and quietness, not manifesting the least uneasiness, even at the presence of strangers, but often coming up to be petted. Burgomaster is as gentle as any ox, and his calves are easily taught, generally learning to drink on the first trial.

In the selection of the herd of the Unadilla Valley Stock-Breeders' Association, there were considerations that did not enter into the selection of other herds. Mr. Whiting, its importer, went to Holland and purchased three varieties of animals—the Variegated, the Black White-Head, and a grey animal. The latter was refused admission into the Holstein herd-book by Mr. Chenery. Thereupon Mr. Whiting went to Holland and filled some scientific breeders with the idea of sending stock to America that should eclipse everything else sent over, and form the basis of a new herd-book that should give to the Hollanders due honor. They sent over a lot of calves which,



8. *Care and Feeding*.—All pampering and overtaxing of the system must be avoided, to prevent premature barrenness and wearing out. A vigorous cow ought to last fifteen or twenty years. Corn feeding, save what is fed green on the stalk, is considered too heating. Oats, shorts, middlings, and perhaps a little oil meal, are preferable. The cheapness of corn is a temptation to feed it, but it is not the best food for breeding and milking stock.

The record of this herd has been conscientiously and accurately kept. The milking was carefully done three times a day, in flush of feed, and the milk weighed with as much care as if it were to be sold or bought by weight.

The following is one year's record, lacking two milkings, from May 16, 1876, to May 16, 1877:

	Years old.	Yield of Milk.	Days in Milk.	Days Dry.	Daily Average.
Maid of Twisk.....	5	12,563½	303	52	41.4
Jacoba Hartog.....	3	10,430½	338	7	29.4
Sijtje Bleeker.....	2	10,711½	265	0	29.3
Nelitta Korndyke.....	2	9,932½	265	0	27.2
Imka Beets.....	2	7,556½	321	14	21.5
Maartje Korndyke.....	3	5,573½	314	54	17.7
Marianna Beets.....	3	7,309½	320	45	22.0
Crijtje Bleeker.....	3	5,490½	190	—	23.8
Fielda Ellswout.....	2	967	33	—	29.0

The manner of feeding this herd is a matter of interest to the dairy public. The cows were wintered through on what hay they would eat, with about half a bushel of beets to each animal daily, and from two to eight quarts of corn meal and shorts mixed in equal proportion, by weight. The feed of the Maid of Twisk varied from four to eight quarts, and the others from two to six quarts, as a matter of experiment. The conclusion reached was that it was not profitable for milk production to feed beyond four quarts daily, and that corn is not the best feed for milch cows or breeding animals. The extra feed increased the flow of milk, but not sufficiently to pay the cost, and the corn meal is too heating, producing a slight inflammation of the udder. There were not sufficient beets to go through, and they were dropped about the last of March, but a few carrots eked out the roots to about the middle of April. The stoppage of the supply of roots made a marked decrease in the flow of milk. All extra feed was discontinued on the 25th day of May, when the cows were left entirely to grass. About the 1st of July, Mr. Hoxie commenced giving a small foddering of green oats, at first carried into the stable in a basket and fed, and afterward fed in the fields as the more economical method. He prefers to have the oats wilted. The field of oats measured a little less than 1½ acres. It was mowed once, and about one-third was mowed twice for soiling. The flooding of the pasture, from the 1st to the 8th of July, was the signal for the commencement of feeding oats. On the 8th of August, fodder corn was substituted for the oats. The corn was planted about three feet each way, with double the quantity of seed in a hill that would be used if a crop of corn were to be grown. Evergreen and mammoth sweet corn were the varieties planted. On the 23d of July, preparatory to exhibition at the State Fair, each of the heifers received four quarts of a mixture of five parts shorts, five parts fine corn meal, and one part of oil meal—except Sijtje and Crijtje, which had only two quarts each—daily. The Maid of Twisk received daily eight quarts. This meal feeding was dropped by the 1st of October, and they now get nothing but pasture grass and a one-horse wagon box full of refuse cabbage daily from the field.

The average weight of the cows, by actual weighing, is 1,174 pounds, and of the ten animals, 1,241. They are all rather thin in flesh, and would readily take on a hundred pounds each. The bull would weigh 2,000 pounds without being really fat. He will be four years old the 10th of next May.

#### Food for Producing Milk.

\* \* \* We think dairymen have not sufficiently appreciated the value of the pumpkin as a food for producing milk. The prejudice against this food for milch cows has arisen from the effect of the seeds when given in too large quantity. The seeds have a diuretic effect, operating on the kidneys, and this has sometimes lessened the flow of milk; but if a small portion of the seeds are removed, this danger is wholly removed. Indeed, the cases of ill-effect have probably occurred from feeding more than the due proportion of seeds. We have seen pumpkins fed quite freely with excellent result in quantity and quality of milk; but it is not fit or economical to feed too largely of any one food. Potatoes fed in moderation are excellent for milk; but, given in too great quantity, they will reduce the yield. Turnips or beets must not be given too liberally. Corn-fodder, given as a sole ration, is unprofitable; but fed with half-pasture, will keep up the yield of milk, and add largely to the profit of

the season. So pumpkins are excellent to keep up the fall flow of milk. Having fully the value of turnips, per weight, they are more cheaply raised, and should be added to the yearly supply of food by every dairyman. When grown alone, it is found that as many tons per acre may be produced as of turnips; but the custom mostly is, to grow the pumpkin with a corn crop. From one to two tons may be grown with a good yield of corn, requiring little more than placing the seeds, at distances of about 20 feet apart, in alternate rows of corn. The cultivation of the corn will be sufficient attention to the pumpkin crop; and this crop will often be equal, in food value, to ten bushels of corn per acre.—*Live Stock Journal*.

THE annual production of butter in the United States is estimated at \$150,000,000. That of cheese at \$60,000,000. The production of butter in France in 1876 was estimated at \$18,060,000, as its cash value.

### The Short-Horn Breeders' Convention

Met at Lexington, Ky., on October 31 and Nov. 1. The attendance was rather limited. The President, Hon. D. Christie, of Canada, delivered the opening address. He advised his co-workers in the cause to avoid undue speculation; to live, in a business sense, within their means; to build up, though slowly, upon a sure foundation; and, above all things, aim at raising the standard of short-horn cattle. As a beef product, our cattle in general, and our method of treating them, must be greatly improved if we would obtain and control the English market, &c. Before taking his seat the President added with much regret that the Association had not been able to induce the Secretary of the Treasury to forbid importations of live stock likely to be infested with rinderpest, and urged the convention to renew its request to the Government to give the matter the consideration it deserved. A special committee was appointed to memorialize the Secretary of the Treasury to stop dangerous importations; also petitioning Congress to establish a veterinary bureau.

Judge Cravens presented a paper deprecating the buying of animals for pedigrees alone, yet admitting their value as an index to the quality of animals and their power to impress them on their offspring. This paper also set forth that we were in danger of injuring the milking properties of the breed by training for show as beef-producers, as from this cause a milk pedigree may not be a sure guide to excellence in families so treated; two cows, nearly related in blood, may prove very different in their value as milkers.

Professor Knapp thought that breeders had failed to impress common farmers with the beef-producing merits of the breed, because they often bought under-sized animals at over-sized prices.

On the second day the morning session was chiefly taken up with the discussion of resolutions, offered by Hon. T. C. Jones, of Ohio, ending in the adoption of the following:

1. All imported animals entitled to record in the E. H. B. should be admitted to the American.
2. The record should show name, color, date of birth, name and residence of breeder, and also of owner (or of person sending the pedigree for record, if the animal be dead.)
3. Bulls should be registered at any age, but not twice, except in case of error.
4. Cows should not be registered till they breed, when produce should be stated with the dam; and a cow should be re-entered if desired for each subsequent calf.

In the afternoon the question was discussed, "How shall we improve our short-horns." Professor Knapp remarked that besides the pedigree and the individual excellence of the parents, we should see that their condition—and especially that of the male—is at the highest point of vital energy at the time of procreation, if we expect the progeny to show an improvement; and Mr. Pickrell added that we must begin to care for the calf as soon as dropped, and keep it improving every day by furnishing in all respects the most favorable conditions.

The debate on the question, "Has any one color any advantage over another?" was opened by the President with the remark that fashion is running wrong at present. Mr. Allen said the original short-horns exhibited a preponderance of white, at least of their bodies, while red—now all the fashion in this country, though not in England—was rarely seen, and the early breeders never thought of seeking it.

Mr. Thrasher said the whites are the best handlers, roans next and reds poorest of all; and good feeding and milking qualities always accompany good handling; yet people save the most miserable bull calf if he happens to be red, and thus the most undesirable qualities are often perpetuated.

Mr. Allen thought this was going too far; he knew capital handlers that are red.

The President contended that the reds are patronized to the practical exclusion of other colors, which is injurious, especially as the dense reds are apt to be bad handlers, with harsh and wiry hair. Hubback was yellow red; Robert Collings' Pilot also; Comet, light roan, somewhat red on neck; Favorite, roan, with still more white than roan, and any number of other instances might be given. Roans are good handlers and feeders. In Great Britain no attention is paid to colors, and first prizes often go to whites. The passion for red has injured the feeding and handling qualities of our short-horns. The great point is to get a good beast; "a good horse can't be of a bad color."

Finally, a resolution was unanimously adopted to the effect that color is merely a matter of taste, not affecting quality or quantity of milk or beef, and that the present fashion of preferring red to the exclusion of other colors is detrimental to the best interests of the breed.

The last question discussed related to the proper age at which to breed. Mr. Thrasher recommended beginning with a heifer at eighteen months, believing such a practice intensifies the breeding and milking propensities. Other delegates gave instances of early conception—eight months, six months, and even four months, without apparent injury, though it was admitted the mother's growth is somewhat delayed by early bearing. Professor Knapp thought it wiser in general to wait until near maturity, if we want to maintain size, and did not believe that females make any better mothers for breeding very young.

**PRECAUTIONS AGAINST THE RINDERPEST.**—The following order bearing date November 12th, addressed to the Collectors of Customs, has been issued by the Treasury Department since the above meeting:

"In consequence of the reported development of the rinderpest in European countries the importations of cattle, or of the hides of cattle, shipped therefrom after the 1st prox. will not be permitted on any conditions, unless accompanied by consular certificates of non-infection, as prescribed by the existing regulations of this Department. In regard to the landing of hides shipped before the date mentioned, and concerning which there has been a failure to observe such regulations, the Department will exercise



its discretion after due investigation. You are requested to give such publicity to this order as you may deem expedient.

### Estimating Live Weight of Cattle.

*The Live Stock Journal* gives the following rule for approximating the weight of live cattle by measurement :

There are several methods in use for ascertaining the weight by measurement of the body, and when the measurement is correctly taken the result is generally pretty accurate. One method is to measure with a tape line from the top of the shoulder to the root of the tail, which gives the length; then measure around the body immediately behind the fore-legs, which gives the girth; and, on consulting a table, calculated by the corresponding figures of the length and girth, the product will give the net weight. Several rules exist. For example, suppose an ox is five feet in length and seven feet in girth. Multiply the square of the girth in inches by the length in inches, and divide the sum by 7,238; and the quotient, multiplied by 14, is the weight in pounds. In using the tape, it should be kept stretched in taking the length and girth. Accurate results would certainly be obtained were the animal always perfect in form, which it seldom is,—the fore and hind quarters being frequently unequal, and their conditions various. The judgment is called into exercise in making allowances for such differences. The animal should stand in exact profile and upon level ground while being measured.

### What is a Thoroughbred Horse?

*The Live Stock Journal* says there exists the grossest ignorance, even amongst those who pass for well-informed horsemen, as to what constitutes a thoroughbred horse, and it thus explains the term :

In the first place, it should be understood that we derive the term, as well as the breed of horses to which it applies, from our British cousins across the water. The term, when applied to horses, is used to designate one particular breed, and that is the running horse. In England this blood has been kept pure since the reign of CHARLES II., without any admixture, save an occasional fresh infusion of the Oriental blood, from which it was originally created; and no horse is a Thoroughbred unless his descent can be traced, in an unbroken, unmixed current, to this ancestry. Stud books were introduced at an early date, and the pedigrees of Thoroughbred horses have long been kept with the most scrupulous exactness, nothing being admitted to registry that is contaminated with any out-cross, however remote.

All our American Thoroughbreds are, therefore, imported from England, or are descendants of animals so imported. A recent cross with an imported Arab or Barb, while it does not vitiate the blood nor render an animal ineligible as a Thoroughbred, is not usually regarded as desirable, from the fact that the course of selection which

has been practiced by the breeders of Thoroughbred horses in England and America, for the last hundred years, has given us a race that is generally considered to be far superior to the Oriental horse to-day in speed, size and stoutness. The compilers of stud books for Thoroughbred horses in this country have relaxed the English rule somewhat, and admit to registry animals that show an unmixed descent for five generations of pure blood; and while, under this rule, many animals may be admitted that are not, in the strict sense of the word, Thoroughbred, yet if for five generations nothing but Thoroughbred sires and dams are to be found in the pedigree, the quantity of alien blood remaining must necessarily be infinitesimally small; and by usage, the animal so bred is, in this country, ranked as a Thoroughbred.

### Crib-Biting.

Crib-biting is a peculiar propensity, which is regarded as a decided vice, because, when the habit becomes confirmed, it is attended by very disagreeable symptoms. In highly-fed horses that have little to do, it is often the result of an idle habit. A great many think lightly of it, unless the horse be much addicted to it; but, although it might do no mischief in a slight degree, it must yet be remembered that it is always increasing by little and little, until in time the most insignificant becomes the most determined crib-biter. A cribber is always known by the worn aspect of the outer edges of the front teeth; and this is not from a fair way of biting, but rather pressing or rubbing the edge of the teeth, either of the upper or lower jaw, or both, against any hard object, especially the manger, as the most convenient spot. Crib-biting consists in swallowing air. The animal takes hold of the manger, or some other fixture, with his front teeth, fixes his head, curves his neck, dilates the upper part of the gullet, and gulps over the air, making a grunting sort of a noise. This practice usually interferes with a horse's endurance. It is true that crib-biters have been known to live to a good old age, and without appearing to suffer any inconvenience from the habit; but these, for the most part, were horses of slow work. It is well enough known that the majority are apt to fill the stomach and bowels with air to such an extent as to impair digestion, impede the breathing, and produce frequent attacks of colic. Old crib-biters that have much work are generally lean, and have a dry, staring coat. Whatever may be the nature of the act, there is soon evidence of a dyspeptic state, as the abdomen swells. In some cases the evils attending the vice are not so great. In course of time the gullet becomes thin and distorted; and from the irregularity in the width of the passage choking is sometimes favored. The simplest way to cure a crib-biter is to do away with the manger, or to cover the manger, or any object against which the horse can crib, with sheet-iron, or fresh sheepskin, which may be smeared with aloes. By placing straps around the throat, which is often done, and thus pressing on the windpipe, the animal is stopped from this bad practice; but this is

attended with the danger of producing distortion and constriction of the air passage, rendering the animal an incurable roarer.—*Prairie Farmer.*

### Hog Cholera.

We are indebted to Mr. Philip M. Springer, Secretary of the American Berkshire Association, for a copy of the recently published Essay on the "Diseases of Swine, their Causes, Preventives and Remedies," for which the Association awarded a prize of \$100 to its author, A. R. Colman, V. S., upon a recommendation of a committee composed of some of the most competent men of the country. From this valuable and timely publication we make the following extract on Hog Cholera.

In the same pamphlet, following the Essay, is a list of owners of Berkshires, entered in Record, and also a reproduction of Mr. A. B. Allen's Essay on the Origin, Breeding and Management of Berkshire Swine, published last year.

This disease is known by the vernacular or common names of distemper, red soldier, red disease, blue sickness, blue disease, hog cholera and measles,—the latter name very wrongly applied. It is a subject respecting which there is a great diversity of opinion: some regarding it as *typhus*, others as *anthrax*; hence the various appellations. It is undoubtedly a blood disease.

It is a malady that appears first to affect the digestive organs, and then the blood undergoes changes favorable to transudations, which occur in different parts of the body. By most authorities it is considered contagious.

**Symptoms.**—The premonitory signs occur late, are very transient, and are seldom observed; usually the death of one or more pigs, under mysterious circumstances, first arrests attention. Some may then be noticed to be dull, not to seek for food or water, but to creep beneath the straw, or any dark place, seeking quiet and isolation from the rest, carrying the head low and ears drooping.

Signs of abdominal pains are often well marked, and there is a disposition to lie on the belly with fore feet outstretched.

In some cases there is great cerebral disturbance, and in others stupor,—so that they may be either wild and frantic and utter cries, or else quite unconscious. Vomiting frequently occurs, the retching being often quite violent, and food may be vomited, or mucous and bile only.

In the early stages the feces are of normal consistence, and the urine pale. After a time diarrhoea sets in, and the excrement is then dark or black colored, and extremely offensive. There is a singular jerking or spasmodic breathing, complicated by congestion of the lungs, and usually a painful irritating cough, which increases the general weakness. Great weakness of the hind parts is often noticed from the commencement of the attack, which increases as the disease advances. The animal staggers when moving about, its limbs cross each other, and often at last are perfectly paralyzed. It is often found

that the creature cannot scream, and there is present a subdued hacking cough. The blood does not flow freely if a vein be opened, and ecchymosis occurs over the whole body. The discoloration of the skin and mucous membranes—suggesting so many names for the disease—commences some time before death, and occurs especially on the belly, inside of the thighs and fore legs, and behind the ears. Where the skin is thinnest it is especially noticeable. The red or purplish color disappears wherever the skin is pressed, except in parts where any extravasation of blood has occurred. In rapid cases, the mucous membrane is of a bluish red color, and in chronic cases it is of a dirty yellow color. The temperature of the body is at first increased, but afterwards it is lowered. Slight forms now and then appear, which consist of discoloration of the skin and loss of appetite, extending over a few days, when recovery follows; but in severe cases, the animals generally succumb in a very short space of time from the commencement of the attack.

**Post-mortem Appearances.**—The skin is black and blue, as if the animal had been bruised during life. The capillaries and moderate-sized veins of the skin and sub-cutaneous tissue are dark-colored, and gorged with blood. A yellow serum is apt to accumulate wherever there is ramified redness. The serous and mucous membranes are studded with ecchymosis, which are most developed as a rule in the thoracic organs. Impaction of solid material in the intestines is frequently observed. The liver and spleen are usually congested and of a dark color, and the parenchyma of the liver more particularly is soft. The lungs are often much congested. The blood is dark, seems fluid, and coagulates very slowly.

**Treatment.**—When the disease breaks out, keep the animal on low diet, and promote action of the bowels by clysters; and give then an emetic—white hellebore, 5 to 10 grains, or sulphate of zinc, 5 to 15 grains, followed by purgatives. The following drench would be suitable: Epsom salts, 2 to 4 ounces; sulphur, 1 to 2 ounces; and gentian and ginger in powder, 1 to 2 drachms, in about one or two pints of water. The doses must be regulated according to the size of the animal. The medicine should be given before diarrhoea sets in. Moderate exercise, fresh air, and syringing or sluicing the animal over with cold water, are measures to be recommended.

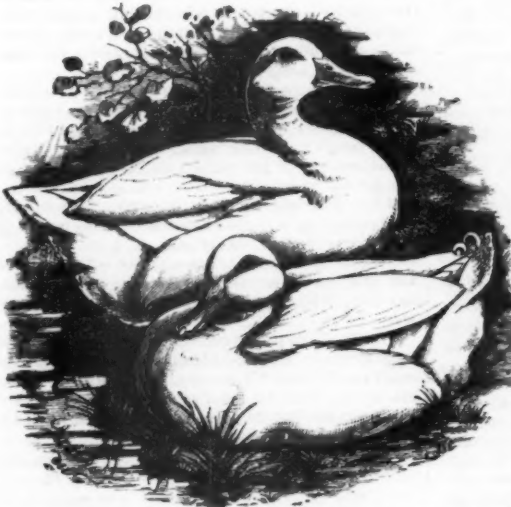
Preventive measures should consist of cautious feeding in young and growing animals, wholesome vegetable diet, and a sparing allowance of only well-cooked animal food, strict attention to cleanliness, and separation of the affected from the healthy animals. The sulphite or hypo-sulphite of sodium, in about 1 to 2 drachm doses, five or six times a day, would act very well. It could be given in a little feed if the animal would take any.

Prof. Morrow says: Of the two investments, that for mills and boilers, or steamers and troughs for cooked food, or that for lumber with which to make a feeding floor which can be kept dry and clean, I count the latter as much the more certain to give a good return.

## Ducks.

By G. O. Brown, Montvue Poultry Yards, Brooklandville, Md.

In previous articles we gave descriptions of the Rouen and Aylesbury ducks. Of the latter breed, fully described in the October *Farmer*, we here give a well-executed engraving. There are several varieties yet, and we will endeavor to give brief descriptions of them. The *Musk Duck*, often improperly called Muscovy, is a native of Brazil, South America, where even now they are



plenty in the wild state. It is sometimes also called the Brazilian duck. They vary in markings,—generally are found black and white in patches, and occasionally a mixture of brown, or drab, black and white. By selection pure white and also pure black birds have been bred. One of the characteristic features is the head: there is a bright scarlet iris or fleshy protuberance around the eyes, (something similar to that of the Barb pigeon,) and the base of the bill carunculated with the same. They have long bodies, short legs, and are exceedingly clumsy. They are poor layers. Their flesh has a musky odor—hence the name. The drake is very tyrannical, and has been known to take young ducks of a different breed by the neck and hold them under water until they were drowned. Time of incubation, 35 to 37 days.

*The Cayuga Duck.*—This variety originated on Cayuga lake, in the State of New York, where, at one time, they were very numerous. They are pure black, with lustrous green reflections.

In shape they are much like the Aylesburies. Their flesh is of a rich, juicy, gamy flavor. As egg-producers, they properly rank next to Rouens and Aylesburies; they are very hardy, and mature at a very early age.

*The Black East Indian Duck.*—This fowl is also known in some places as Buenos Ayrean duck. They are pure black,—the plumage on both the duck and drake being exceedingly rich in metallic tints. They are only medium in size, but their flesh is highly prized for its game flavor.

*Call Ducks.*—These may be considered of the ornamental class. There are two varieties; known as White and the Grey. They are quite small. They are occasionally used as decoys; as they are very active on the water, while their constant shrill utterance of the "call" makes them prized for decoys.

*The Mandarin Duck*, which is also known as "*Chinese Teal*," are recognized as the "most gorgeous" of the ornamental ducks. "The head has a large, long crest, pointing backwards, which can be raised or lowered at will; the color of this crest being green and purple on the top, shading into chestnut and green in the long feathers which extend backwards. A broad stripe of rich cream color extends from the front of the sides of the head, across the eye, to the back of the neck. The neck is furnished with a collar or ruff, of rich brownish red feathers, somewhat resembling hackles, and the front of the neck and sides of the breast are a rich claret or purple. Across the shoulders are two beautiful stripes of clear white, each shaded with black, behind which the sides of the bird are of a greenish or ashy yellow-grey, beautifully and most delicately penciled in very fine lines with dark grey or black. The wings are furnished each with a peculiar shield or fan, standing nearly erect, and which are of a bright chestnut color, beautifully edged with green or blue. The feathers of the back are a brilliant light brown, and the underparts white or nearly so. The quills or secondaries are brownish-gray, edged on the lower web with white. The bill is crimson, the legs are lightish pink, and the eyes a bright black." Wright thus describes the drake.

*Carolina Duck*, also known as Wood Duck, and Summer Duck. This duck has also a crest similar to the Mandarin, and its plumage is exceedingly rich and high-colored. They bear confinement quite well, but, it is said, will breed only under the most favorable circumstances.

*Crested Ducks.*—These are no improvement over the ordinary "puddle duck,"—only in the attractive appearance of a crest, which makes them look more odd than attractive. The *Aylesbury* and *Rouens* will always be the favorites where profit is the consideration, and the *Mandarin* and *Carolina* where beauty and ornamental varieties are desired.

### The Muscovy Duck.

*Editors American Farmer:*

I propose to say a few words in favor of this valuable domestic bird, the good properties and value of which I think are not generally appreciated.

It is the largest domestic duck I know of, except, perhaps, the Rouen, which is represented by W. H. Todd, (a fancier of Vermillion, O.) who speaks of a pair of Rouens weighing 21 lbs., but I think the average Rouens will fall far below that weight. I have just weighed a pair of Muscovys,—the male weighed 9 lbs. and the female 5 lbs.,—14 lbs. for the pair. Muscovy, as applied to this duck, is a misnomer. The proper name is Musk duck,—sometimes called Sheldrake. It is a native of South America,—not a Russian bird, as some suppose. It is a distinct species from all others we know of in this country, and the cross blood with any of our ducks is a Mongrel,—no longer fit for breeding, but very fine for the table.

The plumage of the Musk duck is generally a very dark combined black and green, with a portion of pure white. There are a few pure white; and I am now breeding mine to a lead color, which is more admired than any color in my flock.

They are entirely different from our other ducks in several respects. 1st, they have wattles at the base of the bill, which become very prominent late in the spring, and for high color will vie with the face of any old toper. 2d, they are fond of perching, a thing that I never saw any other duck do; these two characteristics, with their other oddities, make the Musk duck unmistakable.

Their flesh is far better than that of any domestic duck I ever ate, and some rank it next to that of the turkey. They are remarkably gentle in their nature, easily trained to fixed habits,—returning to the same roost at night; excellent nurses, good layers and the best of sitters. They generally lay 18 eggs and set 35 days, and generally hatch all their eggs if undisturbed. I had a duck this summer that set on 24 eggs and hatched 23 ducks. They are no trouble amongst other poultry except to get some of their food,—a quality we should commend. If they are kept tame, (which should be done with all poultry,) they are very docile and easily managed, but very cross and combative if kept wild.

*The best way to manage them.*—Different kinds of poultry should be kept separate,—to avoid trouble and perplexity and to insure success. I have no running water near by, so I have to use a trough filled from my pump. I have a duck-yard adjoining my pump, (80 feet long and 30 feet wide is large enough,) the fence 5 feet high; cut two ditches lengthwise to keep it from flooding from heavy rains; have one ditch 7 feet from the fence, so as to have room to make a rough, cheap shed, of any material that will break the heavy rain; cut the other ditch near the other fence, and throw the dirt of both ditches along the centre, so as to round it some.

When your ducks are hatched, make a pen with four broad, high (15 inches) boards on the

centre strip, and in this pen place a coop to shelter the ducks from sun and rain; and put the mother duck and young in the pen and keep them there until they are large enough to jump out,—allowing the mother to go in and out at pleasure.

The trough for water should not be more than 2 inches deep; the water should be changed three times daily.

*Best Food.*—The best food for ducks (or chickens either,) is the whole wheat offal, mixed with one-quarter or one-fifth Indian corn meal. Feed and water them three times daily, often shifting the coops to keep them from being foul.

When the ducks are four weeks old they can be doubled on to one mother, who willingly adopts all you put in her pen. I then put from thirty to sixty to one duck, and she has them under care and leadership until they are old enough to eat or sell.

When you take the ducklings from the mother, confine her from sight or hearing of them for a week, and she probably has forgotten them; she soon lays and hatches another set. In this way you can raise three sets a season,—the last maturing from the 1st to the middle of December.

*Profits.*—The profit in ducks is not as large as I sometimes see stated for chickens, but I never could reach these big results. My flock of ducks last spring was 12 females and 4 males. They produced me 180 ducklings,—I raised 151. The cost of food about \$12.

150 Ducks @ 40 cts.....	\$60.00
Less food.....	12.00
Net.....	\$48.00

It is best to have your pens so the ducks can have sun and shade,—an orchard is the best for the yard and pens.

Duck eggs will not hatch well under the common hen,—the hen sets too close; consequently killing the young with too much warmth and want of air.

WM. J. SCOFIELD.

Montgomery Co., Md.

### Preparing Poultry for Market.

From a New York dealer's communication to the *Dairyman* we take the following:

If the fowl are fat and in fine condition, they ought to be picked dry and while warm. Fowl picked in this manner will present a better appearance and keep for a greater length of time; if, on the other hand, the fowl are lean and poor, it is better to scald, or not kill till they are in better condition. It is a well-known fact that dry-picked poultry will bring a better price than fowl that have been scalded; also keep better when shipped from a distance.

For scalding the water should be at boiling point. Pour in enough cold water to stop ebullition. Take the fowl by the legs and hold them in the water for about 1 to 1½ minutes; be careful not to scald the legs above the elbow joint. Take off the feathers, and while yet in a warm state immerse in cold water for a few minutes. Then take them out to dry, when they can be packed for shipping. It is better to scald too much than not enough.



## Page's Traction Engine and Farm Locomotive.



We noticed incidentally in our last, in our notes on the Westminster Fair, that the new road-engine of Messrs. Geo. Page & Co., the well-known machinists and engine-builders of this city, had successfully travelled by its own powers of propulsion from Baltimore to the fair-grounds, where it was at work. It made a safe return trip, drawing after it a heavy separator with which, near Reisterstown, it threshed out a crop of 800 bushels of wheat belonging to Andrew Banks, Esq., member-elect of the Maryland Legislature. It has since been severely tested in drawing heavy loads of oyster-shells on the North Point Road,—having passed over several miles of the city street-pavements without accidents of any kind or derangement to the machinery. The engine has developed no defects in construction, and its builders are sanguine that it will, at no distant day in the future, come into general use for certain purposes connected with farm-work, and more especially for use by travelling threshermen, and in constructing and repairing roads.

We give above a well-executed engraving of the engine, the first of its kind ever built in this State. Notwithstanding its weight and power, it is easily managed and steered. It weighs about seven tons, the capacity of the engine is 10-horse power, and it is believed to be capable on roads of moderate grades of drawing loads of 20 tons at a speed varying from two to five miles per hour.

The uses to which such engines may be adapted readily suggest themselves. It is not, of course, presumable that on small farms they can become available except, perhaps, by the joint ownership of several neighbors; but on extensive farms, where numerous horses and mules are required to be kept, it will be seen how they may supply the place of a number of head, doing more effective work and at a less cost absolutely. For instance, in threshing, the machine not only runs the separator but conveys that machine and itself from point to point, relieving an equivalent number of horses. So with the perpetual hay presses, owned in common by several farmers. It is not only capable of working the press but of moving it, without calling into requisition the heavy teams usually demanded.

Its greatest field for usefulness in the near future, however, seems to be in the construction and maintenance of roads. In conjunction with effective Stone Crushers, such as Blake's, now constructed to run on wheels, and much used in some of the Northern States, which it could at once work and move along the whole line of road, the cost of maintaining our country roads would be reduced to the minimum, while their durability would be correspondingly increased. The builder contemplates for such special purposes to make a change in the construction of the engine—that it may, in addition to its other uses, serve as a road-roller.

In Great Britain, engines which are capable of drawing heavy loads over the ordinary roads are already in extensive use,—the better roads than those in this country favoring their employment.

We find in the London (Eng.) *Engineer* of a late date a statement that the demand for the usual portable engines will soon cease altogether, their place being supplied by the engine and machine which come together to the farmer's stack-yard, thresh out as much corn (wheat) as wanted and go away without at all interrupting the field-work. "It is," it continues, "day by day becoming more evident that those who want to build agricultural engines for sale in this country, must give them self-propulsion." It is thus seen that the enterprising firm of Geo. Page & Co., to which so many valuable inventions are due, have come at about the same moment to the same conclusion as the great English authority we quote.

### The Gunpowder Agricultural Club.

*Messrs. Editors American Farmer:*

The Gunpowder Agricultural Club met Nov. 17th, at the residence of Josh. M. Gorsuch,—W. W. Matthews, foreman. The time usually devoted to inspection was mainly occupied in examining a sulky cultivator and a corn-sheller, exhibited by S. H. Slifer & Co., of Baltimore. The sheller was put to work on new corn, and performed very finely. It is provided with a little fan which expels the chaff; and as the corn is separated from the cob in the machine, it drops into the half-bushel ready for bagging. The oldest member of the club pronounced it the only perfect sheller he had ever seen. It struck some of us that the machine, which may be driven by horse-power, ran rather hard; but the exhibitor claimed that this was entirely attributable to the damp nature of the corn.

The sulky cultivator made a favorable impression, so far as appearance and workmanship are concerned; the season not being suitable for a practical test. The club, resuming its sitting session, transacted a considerable amount of routine business before reaching professional topics. The foreman having announced "Half hour for questions and answers," Dickinson Gorsuch stated that since the discussion which took place at the last meeting, he had reflected considerably on the subject which then occupied the club's attention, and he had been struck with the fact that a majority of the members is in favor of plowing down green manure. Can they possibly get more benefit from that method than from applying for grass? If they can convince him that they do, he will change.

Jno. D. Matthews.—He does not want to bury his manure, but he does want to apply it six months ahead, that it may benefit the roots and form a sod; he gets the entire benefit there. His whole aim is to get as thick a sod as he can; after he gets that he is not "afraid to apply his manure for corn." [Note.—In the published account of the last meeting, Mr. M. is reported to have said "that he is afraid to apply his manure for corn." When the proceedings were read he took exception to this sentence, and it was stricken out: hence its emphatic use above.] More benefit is derived from applying to sod in this way than immediately before plowing. He would not apply manure to wheat land except when it is in a thoroughly decomposed state, chiefly on account of its promoting the growth of noxious weeds, which grow as rapidly as wheat; applied to sod there is no such danger. A grower of potatoes had remarked to him that he did not apply barn-yard manure to that crop, for the reason that the weeds trouble him; on that principle he would avoid using barn-yard manure on wheat. He would go farther: applied to wheat, manure tends to a rank growth of straw, and this he has found to be to the detriment of the crop.

Ed. Scott said, "that friend spoke his mind." Manure applied to wheat reseeds the ground with weeds,—all seed in manure spring up directly. D. G.—he does not think seeds can stand the heat generated in a manure pile,—it must destroy the germ. Jos. Bosley.—Where he has

plowed manure down in the fall for corn and repeated with the same crop, and a second manuring, he has never failed to raise his best crops.

D. G.—He once tried corn three years in succession on the same field, manuring well for each crop. That field never produced so well before.

N. R. Miles.—Those who apply on the sod for corn get two crops from one manuring; you (to D. G.) four, viz: a good crop of wheat, two of grass and one of corn,—at least that is his experience.

Jno. D. M. wanted to know what percentage of loss there would be in a pile of coarse material from the shrinkage of fermentation. D. G. thought the ratio about ten to six. Jno. D. M.—in that case he could not suppose there would be a loss of essential properties. D. G.—Chemists claim that the gases which we perceive arising from fermenting manure contain no valuable fertilizing agents.

B. McL. Hardisty asked, is not D. G. in a different position from the rest of us—cow manure decomposes less and loses less in a heap than horse manure. His own manure is mainly horse stable. That alters the case entirely. We discuss the question with reference to horse-stable manure; he with reference to cow.

D. G.—He has been in the habit of putting out his horse-stable manure direct from the stables. He has repeatedly stated before the club that he never had such benefit from the best fertilizers as from horse-stable manure.

B. McL. H.—He has tried the pure cattle manure from the stables at Cockeysville without a particle of benefit; the cattle are fed on strong stuff. D. G.'s case constitutes an exception—he cuts his fodder: hence the refuse that goes into the manure pile decomposes more readily and is handled more conveniently. He made a compost of stalks, but they did not rot,—nothing there to start decay.

A. C. Scott.—Never had his better rotted; all were passed through the stables.

Ed. H. Matthews (to D. G.)—Would you pile if you had no earth to mix with your manure?

(a.) Earth for composting purposes must be dry; he does not always get this to use. As he said at the last meeting, to employ clay is worse than useless. Saw this illustrated in his father's practice. He paid no regard to the condition of the clay, and when used wet the effect of the heat of the pile was to harden it. It remained lumpy in the field when hauled out; there was no disintegration about it.

In regard to shrinkage, Ed. H. M. stated that fifty-five loads of barn-yard stuff, which they hauled out during the winter and piled, had dwindled to fourteen. D. G. thought the tramping of cattle kept the manure in proper condition.

Ed. S.—According to Sharp's theory, as given in an article in the *Country Gentleman*, manure is of no importance. Jno. D. M. thought the fertilizing agents necessary to grow crops and keep up the land could be procured at less expense and applied with less trouble than attends the making and application of manure. There was the same value in those fourteen loads spoken of by his son that there was in the original fifty-five. Ed. H. M.—Where those



fourteen loads were put on, in the succeeding grass crop the weeds predominated.

Here the *half hour* expired. On motion the discussion of the regular question was for the time deferred.

D. G.—In reference to that pile of stuff which shrunk from fifty-five to fourteen loads, had he had the choice he would have preferred the original bulk to the contracted pile. Ed. H. M.—Part was fine and part coarse. Jno. D. M.—But the latter preponderated. D. G.—He had known a rick of fodder consisting of six or eight loads dwindle in a few years to scarce a cart-load of dusty, chaffy stuff. Ed. S.—If A. P. Sharp is correct, plants are fed bountifully from the air, and such fetid substances as the stables produce may be disregarded.

D. G.—Could not accept such a theory in the presence of well-established facts. He knows too well how much benefit he derives from manure. I. M. Price concluded that if Mr. Sharp is correct, the simplest way to dispose of manure and other "stinking" things usually considered valuable to the farmer, is to haul them out into the field to be manured, pile, and let the gases generated in decomposition pass into the air. The action of manure is much dependent on the kind of soil to which it is applied. Some rough manure which he used on heavy clay soil made him a permanent improvement,—it was coarse stuff directly out of the stables plowed down as heavy as he could turn it. That piece of ground has been altogether different since. An adjoining neighbor has a similar piece of ground. He tried his experiment with the same result. This neighbor said he had been trying all his life to improve that spot, but had never succeeded before.

B. McL. Hardisty, (to D. G.)—(q.) You say we cannot get along without barn-yard manure; how about the experiments of Lawes & Gilbert? If we accept as facts the results they have obtained, isn't Mr. Sharp right?

D. G.—The gentleman who had charge of the machines exhibited before us to-day, is a native of one of the richest valleys in Pennsylvania, in which very heavy crops are produced; but no fertilizers are used there; farmers rely entirely on their barn-yard manure. They feed all the produce of their farms and often buy more. Lawes has not deduced a practical system from his experiments,—they are still experiments. B. McL. H.—These experiments will soon have extended over the span of a man's lifetime. We could not desire a test of longer duration. D. G.—Manure is producing fine results,—it imparts organic matter to the soil. We don't expect to improve after the fashion of Lawes & Gilbert, but by rotation. Why do Lawes & Gilbert make their experiments only on small plots?

B. McL. H. spoke of an article he had seen according to which good crops of wheat had been raised by sowing it in rows 3 ft. wide and cultivating between them. No fertilizer or manure was used; the plant was fed from the stirring and air.

D. G. made mention of the tailor's lazy son. To keep the latter employed the father had compelled him to spade in the garden in front of his window. From the constant repetition

of this operation the ground improved. There is said to be tons of fertilizers in the air above us. I. M. P.—If all this is true we can drop fertilizers and manure, and take to plowing and stirring the ground.

D. G.—That would reduce the country to a barren waste. Jno. D. M.—Is it advisable to plow stiff ground in the fall? He has a piece plowed last fall for corn. It was put in fine tilth this spring, but the crop failed. A part of the same field and similar soil plowed this spring gave three times as much corn. Both parts were manured; that plowed in the fall, this spring on the surface. On the other portion the manure was plowed down.

Foreman thought this a corroboration of I. M. P.'s experience. (q.) Is it not the same field which the club concluded was plowed too flat? Jno. D. M. asked if that would have anything to do with his want of success; it had been turned over perfectly flat—at no angle at all. Josh. M. Gorsuch is opposed to fall plowing under any circumstances; ground gets too hard before planting time. In Mr. Matthews' case fall plowing pulverized the soil; moisture made this loose earth sticky, and the sun would bake it like a brick. Jno. D. M.—That suggestion in reference to flat plowing is plausible; may have a good deal to do with his case. How should plowing that is edged be managed in the spring? Ed. S.—He would tear it to pieces with the big cultivator; he could make it in this way equal in looseness to spring plowing.

Jno. D. M.—A few years ago there was some very just criticism pronounced by the club on a piece of fall plowing for corn which came under their notice. His corn, however, was good; the best he had that season. Had the ground in question been thrown up as that was, doubtless his crop would have been better.

D. G. asked for a vote on fall and spring plowing. It stood fall four, spring six; two not voting.

D. G. thought there had been a great change in opinions on this subject since the formation of the club; then the majority was in favor of fall plowing.

Jno. D. M.—It is an evidence of progress. In a paper furnished to the Agricultural Department at Washington, and published in their report, by the Secretary of the Sandy Spring Club, very decided changes in opinions are mentioned as having taken place among its members, during the period of its existence up to that time.

It was now thought too late to take up the question set for this occasion, and on motion it was postponed to the next meeting. T. G.

Baltimore County, Nov. 24, 1877.

## Our French Letter.

### Removing Flowers of Potato Vines.

Messrs. Editors *American Farmer*:

Dr. Booghe publishes the results of his experiments, on the removal of the flower of the potato. By this process he has found an increase in the tubers of 25 per cent., in addition to their quality being ameliorated; he succeeded best with the blue and the white varieties of the

potato; one woman can nip off an acre of flowers in a day; the process will of course be unnecessary in those seasons when the flowers prematurely and spontaneously fall.

#### Indian Corn and its Preservation.

In Italy, Belgium, and France, the cultivation for green feeding of maize—variety, American giant,—has now definitely entered into rotations of crops. There is no question as to its preservation, either in trenches in soils not too humid, or in special masonry pits, or even under a shed, or in a barn. The points in dispute are, the propriety of cutting the maize before embedding it, and whether it ought to be cultivated at determined spaces, or sown broadcast. When in the latter case, the yield is 35 tons per acre; when it was 18 or 24 inches apart, the double. But the stems of the plant cultivated in spaced rows are coarser and harder, and portions are rejected by the cattle; when raised from broadcast, the stems are more slender and succulent, and consumed entirely. In the former, a chaff-cutter is necessary before pitting the fodder; in the other case it is unnecessary, and thus a saving effected in work and machinery that may profitably be set against the larger yield. If chopping one or two inches in length be resorted to, the process is best performed when the maize is green, than when it is retired during the winter and spring, in the fermented state for feeding purposes. Ordinarily, maize for winter conservation succeeds a clover lea, and the soil when in good tilth receives about 9 cwt. per acre of phosphate of lime and sulphate of ammonia, in the proportion of three parts of the first with one of the second. The maize is cut when the plant passes from the flower to the ear-forming stage, say about the middle of October; the forage should be rapidly buried after being cut, powdered with 7 lbs. of salt to the ton, preserved from air and wet.—Some farmers, after threshing the greater portion of their grain, employ the power to cut the maize, and store it in the barn; allowing the mass to rise to the height of nine feet; trampling it well down, and then covering it with sheaves. This shed or barn preserving has the advantage over the outside trench or pit in winter, when rain or frost can inconvenience the cutting of the blocks of "preserve."

#### Hatching Eggs Artificially.

The idea of hatching eggs artificially is as old as the hills: what is new is the machinery, the incubator for effecting the process. This means of hatching eggs of all barn-door fowls, as well as those of pheasants and partridges, has taken a great extension in France; indeed, in many cases it has become an amusement. The machine employed in this country and recommended by the agricultural societies, is generally above four feet long, three high and two wide; it is divided by means of drawers to contain over 400 eggs; the warm water being placed in the centre and the heat distributed and graduated by zinc cases; the eggs are placed endways, so as to receive heat on the two surfaces at once. Not much trouble is given to control the incubator; the water is renewed morning and evening, and the heat regulated according to fixed rules; a series of small windows permit the air to circulate and the hatching is quite independent of atmospheric

influences, as it can take place in the coldest weather. The "mother" is represented by a curtained box, heated similarly, and having hay for the chicks to run upon; the first day they receive no food; the second and third days, crumbs of bread, cooked milk curd, millet, &c.; later, a paste of barley or maize meal, beaten up with milk or water; the latter should be their drink, but only after the third day from being hatched. The principal difficulty hitherto has been to distinguish between fruitful and sterile eggs. A lamp is now employed called the *Indiscrete*; it is a petroleum lamp, over which falls a slide, containing an oval space, size according to the egg, wherein the latter is placed big end upwards, as if it were held between finger and thumb before a candle. After the fifth day of hatching an experienced eye will easily detect the sound egg, as the embryo will present the appearance of a spider, swimming in the middle of the egg. If this test be not satisfied, the egg is dead. After the fifteenth day the egg becomes quite black, the air-space becomes larger and larger, till the chick chips its way out. More than one-half of the poultry raised in France for the home and foreign markets are thus hatched.

#### The Phylloxera—The Exhibition.

It is estimated that the property value of French vineyards has been diminished one-half within the last ten years in consequence of the ravages of the phylloxera. The only new matter in point of a cure is the formation of a joint stock company, to doctor the vines by means of the sulphuret of carbon. M. Robin, of the department of the Drôme, continues to register only successes by the employment of vines imported from America, as perfectly resisting the bug; the Clinton and the Taylor varieties are very marked, as well as the Solonis, the Vialla and the York Madeira, in this respect. The grafting does not materially alter the quality of the vine, as time neutralizes any exceptional acidity, and mixings correct a few minor drawbacks.

The arrangements for the agricultural section of next year's exhibition are as advanced as can be desired: they will have a marked superiority over those of 1867.

F. C.

Paris, October 18th, 1877.

#### Agricultural Education in France.

Editor American Farmer:

Dear Sir:—As the *Farmer* has a regular correspondent in France, I venture to suggest that you invite that gentleman to take up "Agricultural Education in France" as the subject of one or more of his letters; requesting him to note not only the number and characteristics of the institutions organized to impart agricultural instruction, but also the general results effected by such institutions; what proportion of their graduates becomes agriculturists, and whether such graduates go at once upon farms as managers or take subordinate positions until they can obtain further instruction and information through experience. He might also throw some light on the general subject, from a different

point of view, by endeavoring to learn something of the history of men who are considered eminent as successful agriculturists.

Yours truly, J. HOWARD MCHENRY.  
Baltimore County, Md., November 16, 1877.

[We have suggested to our correspondent in France that we should be glad to have him take up the topic here suggested if the necessary material is available.—Eds. A. F.]

## Horticulture.

### Notes on Pear Blight.

Messrs. Editors American Farmer:

There is, perhaps, no question which has elicited so much discussion in horticultural associations and in the agricultural press, without any satisfactory solution, as the one: what is the cause of pear blight? At the late meeting of the Pomological Society on the steamer Pentz, while returning from our delightful visit to enjoy the hospitality of Col. Wilkins, this subject came up for a brief discussion. Prof. Brainard explained his theory, in which the writer can find nothing new, original, or of practical value, and which has been so repeatedly in the press during the past year that I need not refer to it. He was followed by Mr. Meehan, with a brief exposé of the fungoid origin of blight—views expressed by Mr. Wm. Saunders some years since—advocating also, as a local application, the sulphur and lime remedy. From notes taken at the time I find Mr. Meehan saying: "Don't think temperature, heat, cold or soil, has anything to do with blight, but it is entirely due to fungi." With no desire to do the gentleman injustice, this assertion appears to be singularly at variance with admitted facts in the pathology of pear blight. It is well known that circumstances of season and soil, excess of heat and moisture, favorable to the production of fungoid diseases in small grain, are also exciting causes of pear blight; and how can it be possible, therefore, when the predisposition to blight exists in trees, to suppose for a moment that hot, moist weather, alternate showers and hot suns, have nothing to do with the cause of the disease? Practical experience with the fatal malady—pear blight—has long since taught us that it is almost useless to seek for remedies in local applications of any kind, with a view of destroying the poison once entered into the circulation of the tree. Independent of the difficulty of applying the remedy, the disease is beyond the reach of art and the patient dying, before the doctor arrives at the conclusion that the disease is in the roots and incurable. Without further allusion to Prof. Brainard or Mr. Meehan's views on this vexed question, it may not be improper to suggest that we study more closely the laws of hygiene (as we doctors call it) relating to pear trees. We find many diseases in animals and vegetables can be traced to a variety of causes, and if the cause of blight in pear trees be due to fungi alone, which is doubtful, then it naturally follows that our main remedy for this disease is to prevent by art the production of fungi. Is it possible to do this, Mr. Meehan? How is it that

frequently a young orchard grows to fruiting age without a blighted twig, then fruits heavily and in great part dies? During the past twelve years I have seen trees grow to bearing age on high, dry soil, blight as soon as they fruit, are cut down quickly, grow new tops, fruit and again blight. What has the rapid growth, tender wood in the fall to meet the freezes of winter, stagnant moisture at the roots on undrained soils, and the inherent tendency of certain varieties on certain soils to be attacked with blight, to do with fungi?

Will the frozen sap in the tender late-growth—immature wood—rupture the cells, form fungi to poison the sap, travel down when the tree awakens to life in spring, and in hot June and July, when showers and hot suns alternate, develop the fury of the disease and destroy the tree? Will stagnant moisture at the root poison the sap and produce the blighted spots on the bark, or are they produced by the arrest of certain cells poisoned by the fungi formed elsewhere?

I have great respect for the revelations of the microscope, frequently using one myself, and have sometimes thought that the fungi discovered in sap of blighted pear trees was more probably like the maggots in dead flesh,—they were not the cause of the blight or death, but came there in the diseased sap after death, *post hoc* rather than *propter hoc*. Why not study the predisposing as well as exciting causes of blight, since few pear-growers will, I think, deny that we may thus very properly divide this subject?

Among the more prominent predisposing causes, I think we may mention growth in nursery, disposition of varieties, tendency of certain soils.

The exciting causes: excessive growth in orchard, sudden and excessive changes of temperature, hot, dry weather succeeding excessive rains, defective drainage and often times something in the soil beyond our ken.

Do we not frequently find *spur blight* when early frost catches our Duchess in blossom and kills the fruit? Is it not common to find tender sappy shoots on old trees called water-aprouts, (which should never be left there,) killed in severe winters with no other traces of blight in the tree? Is this fungi or frost-bite?

For the past twelve years the writer has been observing an orchard of more than a thousand trees containing over twenty varieties, and until the past two years has not suffered much damage from the disease. Steady, moderate annual growth on well-drained soil we believe to be the best preventive measures; and yet quite unexpectedly, we have seen trees blight in the very best situations for health. A recruiting officer once said to me when he was ordered to enlist one hundred men, he always took at least twenty extra, calculating that twenty per cent. would fall him at the rendezvous; and my advice to pear-growers is in setting one hundred trees, at the same time set twenty in a row near by the orchard, five feet apart, so that they can be easily lifted even at 8 years old to replace the failures and victims of blight. It will be found that these lifted trees, being root-pruned, will not be as subject to blight as those planted in the orchard.

It is very troublesome and expensive; but I doubt if *root-pruning* will not be found a more valuable cure for blight than Mr. Moody's receipt given on the *Pentz*. Will some of your readers tell us why pear trees previously in good health begin to blight with the first crop? Is it because the tap root has descended into the soil and is beyond *healthy circulation*, or in the region of stagnant moisture. This would be hardly possible in a well-drained sandy loam, where we can plow the day after a rain. NANSEMOND.

October 23, 1877.

### Influence of "Stocks" on Fruits.

Messrs. Editors American Farmer:

A few years back the idea was advanced, that in order to produce the best results in peach-growing, the practice by nurserymen of using seed from all kinds of inferior and "natural" fruit should be abandoned; and, in its stead, the plan of securing seed from healthy trees of Early York to grow stocks on which to bud Early York, seeds from healthy trees of Old Mixon to produce seedlings on which to work Old Mixon, &c. &c., was the correct plan.

This practice, it was argued, would likely remedy the caprices of varieties ripening out of their proper season, as well as improve the quality of fruit, &c. To test such theory promptly, I happened at the time to have a lot of seedlings grown from seed of Troth's Early exclusively, as well as a small lot from seed of Heath Cling, kept carefully separate, for a purpose different in nature from this test. The Troth seedlings were partly budded with Troth, partly with "Silver Medal," and partly with Heath Cling; while the Heath seedlings were worked with Troth, and Heath Cling; a few trees of each were carefully planted, and so marked in orchard with others of same varieties, budded on stocks grown from seed of natural and inferior fruit. The Troth on Troth seedlings, and on Heath, each showed some fruit this season, ripened at same time, looked precisely alike, no perceptible difference in quality; those on the Heath Cling seedlings parting as freely from seed as those on the Troth seedlings; in short I could discover no difference whatever. The first year's bearing may not, however, serve as a safe index to future results; but I am very strongly of the opinion, that the difference will amount to but little; from the fact, that did the stock exert as much influence on the bud as accredited in the aforementioned theory, when trees of Crawford's Late, for instance, worked on seedlings grown from seed indiscriminately collected, are planted in orchards, good, bad, and all kinds of Crawford's Late peaches would in consequence thereof be the result; while the evidence of all peach-growers is in opposition to such conditions of their orchards. While such are the facts as adduced by the first year's fruiting of the trees in this experiment, I would not be understood as underrating the very great importance of selecting seed from *sound* and healthy trees.

For whether "yellows" are produced by the "peach aphid," from fungus on the roots, or whatever cause, the result in using seed collected from fruit of such enfeebled trees would be

plainly injudicious and productive of the worst possible results to the peach-grower. If further trial should prove anything of value as to influence of stock on bud, the readers of the *American Farmer* shall be apprized of it.

J. W. KERR.

Denton, Md., Nov. 16, 1877.

### Fruit in Maryland—Grapes and Wine-Making—The Agricultural College.

To the Editor American Farmer:

Dear Sir—I have to thank you for a pamphlet copy of Mr. M. P. Wilder's address delivered at the recent session of the American Pomological Society held in your city. The progress of our country in pomology and horticulture, within the last decade, is truly wonderful; and much of it is due to the efforts of the venerable President and his active co-laborers of this Society.

A sudden illness, caused by exposure to one of the drenching rains of that period, prevented me from attending the exhibition; and though I have read with pleasure many accounts of the brilliant display of fruits and flowers, they but increase my regret that I could not behold the collection in all its extent and beauty.

I much fear that Anne Arundel County, though so near you, was not very well represented on your tables. We have no amateur cultivators among us, and our fruit-growers are more intent on quantity than quality. For peaches, the season was very unfavorable, and the time of the exhibition rather late. As to apples, Maryland does not seem prepared to compete with the States either north or south of her; though I am pleased to observe that Mr. Kerr, of Caroline, obtained a prize for that fruit. Our display of pears was doubtless very creditable. I don't know which of the States represented sent you the largest clusters and greatest variety of grapes; but I do know that I have just finished gathering a crop of about five tons per acre; and which confirms my belief that our tidewater lands are among the best for the production of wine. This crop was grown on light sandy soil, and without manure of any kind.

And now, having mentioned grapes and wine, let me refer to Mr. Husmann's letter in the September number of your journal. He there again advocates the practice of gallizing, and calls upon its opponents to give their reasons for rejecting it; and which he says we have omitted to do. I never have time or inclination to go back to anything I have heretofore written, but I think I objected to the gallized wines chiefly because they were not *durable*. My observation and experience lead me to the opinion that they will not *keep*. I think I have stated that while (as Mr. H. insists) the gallized wine may have just the same proportions of water, acid, sugar, &c., as the natural juice, yet somehow they did not *combine* and *cohere* as when bound together in the grape by the hand of Nature.

Many kinds of artificial stone are now made for building purposes, and the manufacturers of them can demonstrate to us that their granite, or gneiss, or marble, contain precisely the same elementary substances and in the same proportions as the rocks they are designed to imitate.



Now, all this may be so; but who would not prefer to build with stone quarried from the everlasting hills? In such things, Nature will always be far above the reach of Art. But I should have nothing to say against gallizing or even "gallonizing,"—as Mr. Husmann fitly terms it,—if all wine-growers were like him, and informed their customers just how their wines were made.

I regret very much the failure of your efforts to effect a change in the management of our Agricultural College. We differ widely in our views about many questions, but this is one of the subjects upon which we agree to a dot. You remember that I predicted the result when you first mentioned the matter to me. Whatever else may be in the curriculum, the students should be instructed in every operation of the field, stable and barn. For this, such colleges are established; and parents who do not desire their sons to acquire such knowledge, can readily find other schools for them.

As we are approaching the close of another volume of the *Farmer*, I take occasion, as one of its readers, to thank you and your many intelligent contributors, for the varied and valuable information it has imparted to us during the year. With best wishes for its success,

I am truly, &c.,

L. G.

Anne Arundel Co., Md., Oct., 1877.

### Nurserymen as Public Benefactors.

*Messa. Editors American Farmer:*

Your correspondent, Mr. Kerr, (nurseryman) of Denton, Md., in the last No. (November) of the *American Farmer*, takes exceptions to some of our remarks in the September No. of your journal. At first we concluded not to offer to encumber the columns of the *Farmer* with what might be considered irrelevant matter. "Nobody loves critics or respects them either;" but, in this case, taking Mr. K. to be a prominent and intelligent nurseryman, and in every respect worthy of our steel, we have decided to give him what follows, hoping it will prove satisfactory:

We are sorry we have trod on the toes of this sensitive correspondent. We did not in that communication mean to disparage any class of public benefactors, and more especially nurserymen; for we regard them as the special and indispensable friends of Pomologists, Horticulturists, and Florists. That what we said on the subject of "Information for Fruit-Growers" should be construed as an "accusation or severe reflection" on nurserymen, is really surprising to us.

It must be conceded, we presume, that producers of any description have the right fairly to get off their productions or commodities; and that it is to their private interest and even duty to do so. We meant nothing more or further. After this Mr. K. proceeds to charge us with *egotism* (in which, by a round-about movement, he is very careful to exempt himself,) because, in a casual or collateral way, we alluded to *The Southern Apple and Peach Culturist*. This we did, as we thought, in an unexceptionable manner. Here are our words: "Our Southern friends who desire to plant, should procure a fruit book. *The Southern Apple and Peach Culturist*,

for instance, will give all the information necessary for their latitudes, including the preservation and marketing of fruits, &c." We can see nothing wrong in this; especially as our treatise on Fruit Culture is the only regular work on this subject published in and for the South. Most fruit-growers need some guide or book of reference. We could not give the preference to works not adapted to our latitude, however meritorious they might be otherwise. We suppose we might be allowed to add that the very liberal patronage and fair sale of this work in Virginia, and throughout the South, would indicate something in its favor.

He next charges us with giving "every-day facts." Very well, farmers and planters are right apt to forget things appertaining to fruit culture; and we do not think they will fall out with us, even if new or startling and striking ideas are not always presented. Then he complains that we have recommended "such varieties of apples as Nansemond Beauty, Mason's Stranger, &c., for the Eastern Shore of Md. and Delaware, to those who intend to plant." It is true, these are comparatively new varieties; but they have been well tested in Tidewater Va., and, besides, the character given them, or the Mason Stranger, by the American Pomological Society at the meeting held at Richmond, of which a copy of the proceedings is before us, ought to be good authority. It is there stated that "For Eastern and Southern Va. it is one of the best winter apples," and this fine apple was admitted to their list of accepted fruits. Mr. Downing, in the appendix to his large and valuable work, says of this fruit: "It is productive annually; and a popular favorite apple where it is known: rich, spicy and very good." For the above, as we think, good reasons, we ventured to recommend it for the Eastern Shore of Md. and Delaware, the soil and latitude being nearly the same with that of Tidewater Va., together with the Nansemond Beauty. From what we know of this fruit, and what has been said of it by our leading orchardists and nurserymen, no much better winter apple is grown in the soils and latitude above designated.

Mr. K. also says some other things which we think not worth our notice. "In conclusion," he says, "I have to get off my stock and attend to my own interest. I will, as heretofore, keep my list close to home." We hope, Mr. K., you will do no such thing; send it out—advertise. Let everybody know what you have; send us a copy. Perhaps we will find in it "Mason's Stranger and Nansemond Beauty." If we do not, we ought to.

In conclusion, we do not desire to underrate either the intelligence or integrity of the gentleman, or any of the fraternity; but, on the contrary, it is our wish, if not to our interest, to encourage and promote the welfare of all engaged in such useful occupation. With this rejoinder we finally close what we have to say to our Denton friend, the champion of the budding knife.

Kewick Depot, Albemarle Co., Va. J. FITZ.

☞ We hope the friends of the *Old Pioneer* will show their appreciation of its merits by a prompt renewal of their subscriptions for the coming volume.

## Potomac Fruit-Growers' Association.

## NOVEMBER MEETING.

On the sample tables were some apples from the farm of the venerable ex-treasurer, Gen. Spinner, for a name. They were seedlings, and a good quality of autumn fruit. Also some large and smooth tomatoes, grown upon a pile of coal ashes,—showing the decided fertilizing properties of the ashes.

Col. W. H. Patton, of Little Rock, Ark., made some remarks upon insects destructive to vegetation,—mentioning specially the curculio, the moths of the cotton, and tobacco worms. "I have made these insects a study for several years, and the important discovery has been made that these and some other insects are destitute of eyelids; and, as a consequence, fly and operate only at night,—the darker and stiller the better. It is well known that light blinds insects and that they will fly into it and destroy themselves." Acting on this hint, lights had been placed in dark and still nights among fruit trees, cotton and tobacco plants, and thousands of these destructive insects had been caught. It is of comparatively little use to catch these insects after they have laid their eggs, but they must be caught before they have done the mischief.

A common hand-lamp fastened to a small block of wood, placed in a pan of water about the time plums, &c., blossom, will be found an efficient destroyer of nocturnal insects. They operate but little during bright or windy nights.

Of course, if the orchard is large, several lamps will be required.

Prof. Brainard read a report on

**Fruit-Houses.**

Making mention that our summer fruits began so soon to decay after ripening,—that even fall and winter fruits, by sudden extremes of temperature, are liable to injury, and we are thus deprived of those delicious fruits we had laid by for future use, he proceeded to say that of the various methods designed to preserve fruits, we find none so successful as that described in the patent of B. M. Nyce, issued in 1858, and extended in 1872. His process has been subjected to a severe and constant test for more than 18 years, and has in all cases and in widely different climates been proved to be eminently successful.

The principles upon which this fruit-house is constructed, and upon which its success depends, are a cool, dry and pure atmosphere, with complete isolation from free oxygen and other destructive agencies.

He then gives the testimony of gentlemen who have used the houses for many years in some of our large cities, and who have kept oranges and lemons, apples, pears, and other fruits, in large quantities for months, and realized an advance of 100 per cent. on the fruits.

G. F. NEEDHAM.

**Keeping Fruit.**

The conditions required are a uniform temperature, as low as may be without freezing, and dryness. The cellar of the house should not be used for storing large quantities of fruit if it can be avoided, and if used there should be ample

ventilation to carry off the carbonic acid given off by the fruit in ripening. The temperature of 35 degrees to 40 degrees is best, and when the thermometer shows above 40 degrees, the outer air, if colder, should be admitted. Apples, properly picked and barreled, need not be disturbed until wanted for use or sale. Store pears in boxes or drawers, where they may be occasionally inspected, as they often ripen unevenly

**Fruits and Vegetables in Tidewater Virginia.**

At the quarterly meeting of the Norfolk Horticultural and Pomological Society, held October 25th, Prest. Leighton delivered an address, from which we take the following extract:

Another Horticultural and Pomological season has closed with us, leaving sad traces of the business depression throughout the sections that receive our products. While most of our fruits have fallen very far short of a full crop, the long-continued inactivity of labor North has reduced sales to unremunerative prices.

Tidewater Virginia maintains her reputation for fine pears, as evidenced by the award of six "Wilder Medals" among the counties of Warwick, Norfolk, Princess Anne and Norfolk city, at the late session of the American Pomological Society, held in Baltimore. I will name a few varieties of pears in their order that seem peculiarly adapted to this section: Duchesse d'Angouleme, Seckel, Bartlett, Howell, Beurre d'Anjou, Sheldon, Urbaniste, to which only a few other varieties may be added, excepting for family use.

While our cotton receipts are correctly reported and destination of shipments named, the towering interest of this section has passed year after year unrecognized in our statistical reports, and as this is the proper body to act in this matter, I urge your attention to it.

The gentlemanly agents of our transportation lines cheerfully furnished accurate data of the strawberry crop of this section the past season, which took our friends abroad quite by surprise, it exceeding three millions quarts.

An accurate statement of our vegetable products would equally astonish them. The last statistics of the vegetable crops were in 1868, (and that was regarded as susceptible of many allowances on account of approximations instead of definite data) in which the article of kale did not enter,—it being then unknown to us as a market vegetable, but now shipped by thousands of barrels.

It is desirable to ascertain what new varieties are succeeding and what old varieties are being dropped for the general market, and in this connection I would recommend the appointment of a committee to report at the next meeting upon the relative value of any new varieties of vegetables compared with the old, tested in our section.

Reports from our own and other States point to increased ravages of the pear blight the past season. Although rather late for the suggestion, some of the poisonous sap may yet be checked in its return to the roots by the removal of the



blighted parts and the application of carbolate of lime as a wash where amputation is performed. This disease is a lurking mystery, baffling scrutiny and common sense conclusions: the unsolved problem in pear culture. If the descending sap through the bark, which adds what we usually call a grain, or what is the increase of a year's growth of the diameter of a tree, is poisonous, its descent to the roots is not neutralized by the earth, but in its ascensions in the spring through the woody portions of the tree may perpetuate the disease. This is my observation of the orchards of others.

### Floriculture, &c—December, 1877.

By W. D. BRACKENRIDGE, Florist and Nurseryman,  
Govanstown, Baltimore county, Md.

#### Greenhouse.

A greenhouse, or, in other words, a plant conservatory connected with a private dwelling, whether in country or in town, can, with no very great care or expense, add much to the gratification of the owner, and more particularly so when there are ladies belonging to the establishment, who can retreat during disagreeable weather to cull Flora's gifts in the shape of nosegays for the parlor table.

Now with many the question will naturally arise, what kinds of plants would afford the greatest amount of flowers, and at the same time be most easily cared for? To assist such in making their selections, we will venture to name a few; but in so doing, we want it to be distinctly understood that those we are about to name may be considered as only a nucleus of a collection, better adapted as winter than summer bloomers.

The great majority of people prefer flowers that emit a perfume of some sort or other. Now the carnation is of the number of such as send out an agreeable one, and we therefore commend the white kind known as President De Graw; and as a colored sort we name La Purite; both are free bloomers. No one should be without *Heliotropes*—and of numerous kinds the old Peruvian sort is the most fragrant; but the one called the Chieftain produces the largest heads of flowers. Do not overlook *Maria Louise* double violets; these should be established early in the fall in boxes or earthen pans.

Double and single *Hyacinths* are indispensable; and then there should be pots containing each 3 to 5 roots of *Duc Van Tholl* Tulips and *Crocus* in variety.

*Abutilons* lifted and potted early in the fall bloom freely during the winter, and as a good white sort, we name *Boule de Neige*; and as a colored variety, *A. Vexillarium Pictum*. *Habrothamnus Elegans* is also a free grower and profuse bloomer, and therefore very desirable if kept in a warm part of the house. *Daphne indica* and *Olea fragrans*, though not producing flowers that are very gaudy, yet are considered the most fragrant of plants which adorn our greenhouses, and the flowers of the latter are said to be used by the Chinese in scenting their

teas. *Chorozeria varium* produces a profusion of orange and crimson-colored pea flowers, well adapted with which to tint up a bouquet composed of white materials. Every one knows what a *Calla Lily* and Chinese *Primrose* look like, and no collection appears complete without them; yet for ourselves, we never could discover much grace or beauty in a *Calla Lily*, beyond its pale green smooth leaves and sub-aquatic aspect; the flower itself is about as stiff and formal a production as can be found produced from dame Nature's laboratory. Some kinds of *Begonias* are well adapted for winter and spring blooms—as *B. Weltoniensis*, with pink, and *B. Sander-sonii*, with scarlet flowers; there are also a number of the tuberous-rooted newer kinds that are also gaudy and easy to cultivate. All the varieties of *Bouvardias* are free bloomers, therefore good for decorative purposes, particularly the *White Davidsonii* and *B. Leiantha*, which has scarlet flowers. Where many button-hole and hand bouquets are wanted, then it will be essentially necessary to maintain a good supply of *Sweet Alyssum* and *Mignonette* in pots and boxes; and where larger masses of flowers are required for table decorations, then by all means grow a number of plants each of *Stevia odorata* and *Eupatorium riparium*, whose white flowers surrounding tufts of the crimson bracts of *Poinsettia pulcherrima* are very effective on a table under gas-light, particularly when a goodly sprinkling of green of the *Adiantum* and *Davallia* kind. But no greenhouse collection of plants would be deemed complete without some representative of the *Camellia* tribe; and as one that blooms early we name the old Double White, and to come in towards spring we give another, the *Candidissima*, and perhaps two of as good pink kinds as we can name are the *Sarah Frost* and *Landrethii*, yet there are others quite their equals. People who have *Camellias* will be almost sure to want *Azaleas*, as the one appears to attract the other—as they are generally found together in collections; of these last the kinds are numerous, and as a general thing all are profuse bloomers, and easy of culture.

We would also recommend as a feature in a collection a few of the *Cactus* tribe, such as *Epiphyllum truncatum* and its varieties, which, when grafted on stocks of *Pereskia aculeata*, or *Cereus triangularis*, bloom freely in a greenhouse. To the foregoing array of candidates for favor, we would add some white and purple double-flowered ten-week stocks, as well as a few *Cinerarias* and *Calceolarias* to keep up the show in spring until *Geraniums* and *Pelargoniums* begin to develop their flowers.

The attractive feature in a greenhouse or conservatory does not consist altogether in the individual specimens of well-grown plants; but it oftener suggests itself to the mind of the looker on by the artistic manner of their grouping together, and this can, in a great measure, only be effected by doing away with the straight and steep commercial stages so much in vogue at the present day, by turning them so as to form recesses, where an aquarium could be had, or a grotto formed of rocks, ferns and *Selaginellas*. There should also be reserved suitable

receptacles for rustic-basket stands, whose rim and crooked supports could be wreathed with garlands of *Myrsiphyllum*, (*Smilax*), and various kinds of *Maurandias*; and we would add to this a recently-introduced climber known as *Senecio Macroglossum*, whose leaves are thick and glossy, and have much the appearance of the old-fashioned English Ivy; the flowers are about 2½ inches across, and eight-pointed, the color being a pale orange; and altogether when well grown is a very handsome trellis plant.

Now, as regards the heating of such a plant-structure as we had in view at the beginning of this article, we would say that if it has been erected so as to form part of the residence, then it might be heated by hot-air pipes leading from the kitchen range, or by a branch pipe led off from the furnace which warms the whole dwelling; but as this mode of supplying heat is not always to be depended on, even with the aid of having curtains let down behind the glass, we would therefore prefer having an independent heating apparatus, either in the shape of a hot-water boiler with pipes or hot air by brick flues; the latter method appears to us the safest, particularly in a place where no regular gardener is kept. The temperature to be kept up should range during the night between 40 and 55°, and during the day not to get above 75° F. without giving air, which should be admitted from above during the winter months.

#### Lawn and Pleasure Grounds.

Of late years many important additions have been made to our collections of hardy trees and shrubs, causing arboriculturists to make inquiries with regard to their qualities and adaptation for purposes of ornament. Particularly from Japan has many valuable articles reached us; as for example the unique *Acer colchicum rubrum*, together with the more twiggy yet more humble *Acer polymorpha* and its numerous varieties with deeply-lobed and lacerated, various-tinted and highly-colored foliage, all of which appear to succeed well in our climate; added to these is that gem of a tree, Wier's cut-leaved Silver Maple, and as a fit companion would be the purple-leaved *Acer pseudo-platanus*,—a striking variety of the English Sycamore Maple; these, with the variegated silver variety of the *Acer negundo*, would form one of the most unique group of trees conceivable.

Over twenty years ago we disseminated in Maryland specimens of the then almost unknown Norway Maple; this is now more generally known, and may be considered one of the most handsome trees under cultivation. Next month we may name a few more interesting trees; and now we will talk about a few notable flowering shrubs, and first we notice the Japan Judas tree or rather bush, *Cercis japonica*, which produces its bunches of purple Pea flowers down nearly to the ground, very early in spring, and when the plants are quite small,—the plant being hardy and very desirable. The next is *Viburnum plicatum*, a Snow Ball, bearing pure white flowers in great abundance and beauty; but independent of its rich inflorescence, its beautifully plaited leaves would be quite enough to recommend it.

There are several kinds of *Hydrangeas* not much known but which call for some notice

here; and the one which we think stands at the head is *H. paniculata grandiflora*; when grown in rich land its branches of white, faintly rose-tinted, are truly superb. The H. Thomas Hogg, a pure white variety of recent introduction, is also very fine; and then we have the *H. Otaksa*, a rose-colored variety, which also proves a great addition to our already numerous kinds of hardy ornamental shrubs. W. D. BRACKENRIDGE.

#### Private Places Selling Plants.

I had really hoped that all the talk about private places selling plants or flowers had stopped, and that like many other affairs it would regulate itself. If a gardener hires with a gentleman as "A Cabbage" did, he should find out what he was expected to do before he hired. Does he wish his employer to *give away* his surplus fruit, vegetables and flowers, or, worse, to let them *rot on the grounds*. Probably "A Cabbage" would like them to be given to him as a perquisite. While there are some who can afford to pay a gardener from \$400 to 600 a year and find him,—making every quart of strawberries cost 25 cts., and potatoes \$2 a bushel,—there are others that cannot afford it, and must either give over their fondness for flowers, &c., or sell part to pay expenses.

Now while flour, bacon, &c., have fixed market values, I have never been able to come near the price of a plant. Mr. W. F. M. sold me verbenas I think at \$5 per 100, and others in the trade asked me \$8 for plants not so good as his. The Baltimore florists might with more justice have said that men on the Eastern Shore are ruining trade. The parties who are doing most harm to the *regular trade*, are the small vegetable gardeners around the city who add a small greenhouse or a few pits to their regular business, and then sell far below the trade, and probably sell \$50 worth of plants where amateurs sell \$1. Amateur may sell more cut flowers. That the regular trade likes to buy as low as possible, I will mention a circumstance as it was told to me: A gentleman in Baltimore purchased a lot of new plants abroad, and his gardener propagated some from them. One of the trade wanted some of the young plants. They were offered at less than half the cost of the first, and he did not want them. W. F. M., like the writer, wants to see floral taste extend. He can write good useful articles when he chooses. Let the amateurs sell what the florists may want from them, and let W. F. M. give us something better to fill your pages than this chronic growl of his, for he is the only one who seems hurt.

CEDAR MOUNT.

#### English Wheat.

Mr. J. B. Lawes, writing to the *London Times*, estimates that the wheat crop of 1877 produced in England will not exceed 10,000,000 quarters, leaving as much as 13,000,000 quarters to be imported, unless the high prices of wheat should somewhat reduce the average demand—an alternative which he thinks rather the more probable of the two. In any case, however, very considerably more than half the bread of England must this year come from abroad.

## The Grange.

### The Grange in Maryland.

The Order of Patrons of Husbandry is not so strong in this State as from the extent of our farming population it should be. Thirty thousand farmers, with their families, ought to give a membership of more than 6,000 to the grange,—that figure being probably not more than six per cent. of those eligible to membership.

In the face of this (comparative) meagre membership the Order is more effective, more influential and better held in hand than in States where numerically it is far stronger. The wise and prudent counsels which have marked the guidance of its work sufficiently accounts for this satisfactory result. It would have been hard to find in Maryland a combination of men better fitted to organize a new system, which was wanting in all beacons by which to steer, than those who have so far directed its progress. Not only in the fortunate choice of a Master, who, moderating earnestness by sound judgment, lacked entirely that disposition (often but too common with those called to take lead in social movements) to believe themselves the centres around which all else revolves. Active yet modest, that he has no aspirations to appear the orator, has doubtless contributed to the better performance of his unostentatious but unremitting work. The Executive Committee entrusted with the business interests of the Order, and to whom was confided the no less delicate than difficult task of cementing a structure into which entered materials of varying and even diverse interests, and that, too, after the effervescing enthusiasm of novelty was disappearing, was happily composed of representatives from all the different sections of the State, and men of capacity and experience. Here, too, zeal coupled with prudence and energy tempered with discretion,—unusual, at least, in a combination formed almost, as it may be said, fortuitously.

Whether in the test of time the grange shall succeed or fail, due praise can never be withheld from those who, in the hours of greatest peril, manned the bark and got her safe to sea, clear of the breakers of inexperience and the shoals of contending interests.

But the work thus began is far from complete. The framework needs filling in. Instead of six, the Patrons should constitute from twenty-five to forty per cent. of the farming class. The working machinery already adapted to the less is ample to keep the greater number in action.

What is needed, as it seems to us, is a more general diffusion of information as to the objects of the grange organization, the work it is doing now, and the wider field of usefulness it seeks to occupy. This, for the enlightenment and persuasion of non-members; and, for members of the Order, some means of intercommunication more frequent than the meetings of the County and State Granges,—whereby interchange of thought and information may be accomplished.

Neither of these ends appears in this State to be sought after with any degree of method or persistence. The lecture system is a good one, so far as it goes, and deserves expansion; but it does not reach far enough, and is not all-sufficient. The State lecturer is an eloquent and popular speaker, who always pleases his audiences. Another speaker, entirely different from him in style, but probably even more effective, is State agent H. O. Devries; who, with no pretensions as an orator, no graces of rhetoric, by the frank, straightforward manner in which he delivers his "plain, unvarnished tale," so impresses his hearers that we risk little in naming him as the most useful worker in this field in our State. It is impracticable, however, for these men, or for them, even with such auxiliaries as might be selected as assistant lecturers, to reach every subordinate grange, and, what is demanded still more, every farming community. Yet this is the one thing needful for the expansion and success of this movement in Maryland. In things temporal, as well as spiritual, men cannot believe unless they hear, and they cannot hear without a preacher. Nor can one preach unless he be sent.

There is but one complete adjunct and supplement to the lecture system, and that is the press. Strange as it seems, the leaders in Maryland have not only neglected but ignored the necessity for, and the usefulness of, this ally. It is true there are two periodicals, each assuming to be the organ of the grange in Maryland. We do not know whence one of them—*The Farmer's Friend*, published at Mechanicstown, Pennsylvania,—derives authority for its claim; but the other—*Our Fireside*, published in Baltimore,—was formally commended to the Patrons of the State by the State Master, the sub-Executive Committee, and the State Agent. Yet in their columns we find nothing warranting their claims to be the mouthpieces of the Maryland granges; no communications from the State officers; no interchange of views between subordinate granges in different portions of the State; no elucidation of grange aims for the benefit of

those not in the Order; no reports of successes or failures in grange work, and very rarely anything at all from the granges of the State.

The *American Farmer* proposed at one time to give space to such addresses, rulings, &c., of the Master, notices of the Secretary, reports of other State officers, and whatever other material it was desired to give to the public to show the working, the progress and the endeavors of the Order. It was assumed that a journal circulating largely outside as well as inside the Grange would be more serviceable in extending a knowledge of the principles of the Order than one limited entirely in its distribution to the membership; and a specific disclaimer was made of any wish to have the *Farmer* made or styled an "organ." That a publication is an organ can only be interpreted to mean—if it means anything—that it is pledged to sustain, "through thick and thin," the opinions and acts of some man or set of men; that it surrenders independence of thought and expression. The *Farmer* proposed to do neither. It offered a convenient vehicle for exchange of sentiments and experiences among the Patrons of Maryland, and the means of presenting the principles of their Order and exemplifications of its practical working to the general farming class. Its proposal, however, was not accepted.

Yet the widening into just proportions and full success of the Grange system in this State is a work not to be done in a corner. If to be done at all, an important element of success, which cannot be overlooked, is the sympathy and support of at least one journal of character,—not ephemeral and not devoted exclusively to private ends. We say this without reference to ourselves, but because the importance of this matter seems to have been overlooked in Maryland. In almost every other State but ours it is acknowledged and acted upon. Even the National Grange Lecturer has been withdrawn, and the circulation of the Grange Record recommended to supply his place.

Where a lecturer can go but once a paper goes a dozen times, and it reaches besides thousands whom the lecture system can never reach. Its showings and appeals, too, are persistent, not transitory. They may be read and read over again in the quiet of home; the statements made analyzed and the arguments sifted,—as they cannot be under the influence of an address from a fervid speaker. A record of what good is being done, the material savings secured, successful meetings held, is of itself stimulating and helpful. The communication between members of distant granges is also encouraging. In short:

those inside ought to be, must be, stirred up to read more and think more of their own work and the work of the grange; and those outside, who ought to be in, need enlightenment, and the line upon line and precept upon precept which compels conviction and secures adhesion. This is one of the clues leading to the greater success of the Order in Maryland.

### Politics and Political Economy

[Continued from last month.]

The farmer takes to market the product of severe and protracted toils, and finds others obtaining a better living with less arduous labors, by simply transferring his produce; in this the merchant derives undue profit. He has a just case in law and fails to obtain justice; here the law is defective; or should he succeed, it is at an expense greatly disproportionate to the result. Here the lawyer has undue advantage. If he requires an advance of money, it is at such an outlay as will leave him either without profit or with one so small that he despairs of pecuniary reward on borrowed capital, the foundation of so many personal successes. In sickness, the physician's heavy bills still further embarrass the hardy toil which follows his recovery, or his estate in case of his decease; here the physician's remuneration is disproportionate to his services.

If he asks proper legislation to give due effect to his trying labors, he is met by so many obstacles and so much opposition from the agents of other vocations, that he retires discouraged from the attempt. Here other callings, in securing favorable legislation, maintain their ascendancy.

Combination, with the treasure of long years of accumulation and undisturbed success, meets him at the threshold of authority, and bars his way to the tribune of justice.

Speculation has usurped the place of legitimate trade, and unjust class restrictions have taken the place of the wholesome regulations which would effect a disposition of the farmer's produce, in the interests of all affected, by its production, transportation and consumption.

We have given no details of the wrongs of the agricultural class, but rely upon well-known facts to substantiate every material allegation in our report. We ask justice; justice in Halls of Legislation; justice in Courts of Justice, which cannot be obtained as now constituted; justice in the assignment, apportionment of taxes, which are now at least double, and are not necessary under a wise and economical administration of the public fund; justice in the market, on the railway, and on our public roads; justice in the manufacture, inspection and sale of commercial fertilizers and agricultural implements;—and we intend to make an effort to secure it.

Our report shows that we make no class-war against other classes; we have been careful to accord to each its due and honorable share, its indispensable importance, in the work of the world which has been assigned to man. We would interfere with existing privileges only where they are iniquitous and injurious to others, as well as those who use them; for every



act of oppression and wrong redounds to the injury of the oppressor, and we seek perfect justice to all, for we are well aware that agriculture finds its greatest reward where the success of other vocations enables them to purchase liberally its productions.

Hence, Political Economy may properly include every question bearing on man's social progress, or affecting his relations to his fellows as an individual or a citizen; especially those relating to education; facilities for social intercourse, such as roads and railways; banking, (the proper use of articles used as the standard of value or to represent the standard of values, bases of exchange, commerce, necessary transportation, storage, commission, legislation, laws, and the manner of securing and executing them,) and the best means of inaugurating such social institutions as shall affect the advancement and the prosperity and happiness of our race.

We have pointed to the application of the principles of Political Economy to governmental proceedings as a remedy for the evils of governmental error; it may be urged that Political Economy differ in their views on the various questions they discuss, but with the appointment of public agents to make laws in the interest of the people generally, and not of individuals or corporations, all disputed questions could readily be decided by judicious and limited experiment without repeating systems which have been found erroneous; and with only the good of the people in view, few serious errors would be committed, and these could be rectified without entailing the fearful results that now attend the incapacity and immorality of our public servants.

We proceed to examine the other branch of our subject,

#### **Partisan Politics,**

Which we define to be "the popular strife for mere party or personal supremacy."

If all the questions at issue in a political canvass could be calmly and courteously and fairly discussed in a grange meeting, without any of the bad feeling their discussion usually elicits among the people, great good would be done by such discussion; knowledge of candidates would be disseminated was discussion fair, honest and unprejudiced. If the channel of truth, light would be thrown on questions of which voters remain ignorant, but as participants in these discussions are sometimes interested parties—candidates or friends—the necessity of excluding the questions which excite warm and selfish controversy, because apparent and as personal elevation and strife—apart from any bearing whatever of the principles of Political Economy—forms such a prominent element in our periodical elections. We submit a few conclusions that we may not neglect to investigate matters which should be examined on the one hand nor on the other; push our inquiries into a region of party strife, with its selfish passions and its personal prejudices.

The name of any candidate for any position on any ticket should not be mentioned nor referred to in any manner to identify him.

The name of any political party, past or present, should not be mentioned, as the devo-

tion of a member to his political party might be shocked by even just allusion to political transgressions.

No allusions should be made to any question of current political agitation *as such*.

Each member when discussing a question of general political economy, should exercise due care in the selection of his language, that no member's political opinions may be assailed, or their feelings aroused by such discussion; and when so affected, it shall be the member's duty to instantly retract the objectionable remarks, even though they be true in every respect.

We alluded above to the appointment of various agents, public and private, by the agricultural, commercial and industrial classes, for the transaction of public and private business: hence follows the necessity, in every case, of capacity—a knowledge of the work to be performed—and integrity in the appointee to secure its faithful performance in the interest of those who rely upon his energies.

We hold this a cardinal principle, an unalterable rule, adherence to which would prevent most of the evils which now attend the administration of our public affairs.

With integrity in all who are so appointed or who desire such appointment, we should also be spared most of the evils which attend our political campaigns.

We hold that immorality—the use of money and other articles for bribery, intoxicating liquors to influence susceptible voters—indicates the moral if not intellectual disqualification of those who employ them, and that such are unworthy of support or position; for we believe the mighty forces of a political canvass should be in alliance with those agencies in society enlisted in its elevation and purification, and not with those engaged in its degradation and destruction.

We hold further that our public agents should be governed by the strict principles of political economy, that only such an expenditure of the public funds should be made as is actually necessary to secure the object in view; there should be no officers without duties, and no more appointed than are necessary to discharge the duties required.

With knowledge and integrity on the part of appointees, a door would be opened for the escape of the agricultural class from the difficulties which embarrass their operations. The importance of our great interest demands that we should encourage the selection for public station only of those who are acquainted with our needs and will faithfully attend to them.

In regard to the agitation in our grange meetings of the various questions embodied in the principles of Political Economy, we submit that our Order is composed of a vast body of enlightened citizens. We have among us the Philosopher, the Patriot, the Statesman, the Scholar and the Christian Philanthropist; is it not reasonable to suppose that a body so constituted is competent intellectually to investigate these complex questions, and also that such inquiries would be honestly conducted to secure their solution in the interests of all the people?



Largely interested as tax-payers in the stability and excellence and economy of good government, would not their decision command the respect of all classes of the people?

We hold that such decision by a body so composed *would* command general acquiescence, and your committee suggests to the Patrons of Maryland and the country generally, the propriety of agitating every admissible question bearing upon our prosperity, and we add the humble belief that such a course would inaugurate a condition of affairs that would give every inhabitant of our land "justice and right, freely without price, freely without denial, and speedily without delay." Respectfully submitted,

DAWSON LAWRENCE.  
WM. J. SCOFIELD.

### An Opportunity for the Grange.

*Editors American Farmer:*

It seems to me one great need of the world is reform. Morals have not kept pace with science,—consequently men have great facilities for doing wrong without having conscience enough to keep them from villainy.

The need of reform exists in all the States,—if not over all the civilized world. The question is, how are we to get it? I cannot see a better way for Patrons than to begin in the grange,—strictly avoiding partizan politics.

In the grange we have all the elements of civilization,—reform, progress and the body politic. We have Patriotism, the Politician, (in the true sense,) the Statesman, the Scholar, the Philanthropist, the Christian,—all bound together by a common interest, by a fraternal band "as gentle as the silken cord that binds a wreath of flowers, yet firm as a band of iron."

If this be true, where can we find a more hopeful place,—a more effective organization for reform, human advancement, a higher civilization and christianization, than the grange? It does seem to me if the grange is to accomplish a good thing, it will ultimately be one of the means of bringing our race up to a much higher plane than now prevails. \* \*

Montgomery Co., Md.

THE MARYLAND STATE GRANGE will begin its Annual Session on Tuesday, Dec. 11th, at 3 P. M., in Lyric Hall, Law Buildings, cor. St. Paul and Lexington streets, Baltimore.

THE NATIONAL GRANGE met on the 22d November and has been in session in Cincinnati for several days, but up to the time we go to press very incomplete reports of the proceedings have been made public.

The election of officers resulted as follows: Master, Adams, of Minnesota; Overseer, Woodman, Michigan; Lecturer, Mortimer, Cincinnati; Steward, Vaughn, Iowa; Assistant Steward, Symmes, Kansas; Chaplain, Forsyth, Illinois; Treasurer, McDowell, New York; Secretary, Kelly, Louisville, Ky.; Gate Keeper, Dinwiddie, Indiana; Ceres, Mrs. Adams, Minnesota; Pomona, Mrs. Woodman, Michigan; Flora, Mrs. Moore, Maryland; Lady Assistant Steward, Mrs. Hall, Louisville, Ky.

### Work for the Month—December.

The closing of the year should see the work on the farm evenly brought up, and all things as far as possible made safe for the winter's cold, which, in the ordinary course, may now be expected.

**The Corn Crop.**—Should be gathered, husked and stored away safe where no depre-dators can get access to it. Fodder and husks too should be put away where they can be conveniently reached.

**Tobacco**—As the season admits, should be stripped,—great care being taken to assort the various grades, the attention paid to this being compensated when it is marketed.

**Plowing.**—Soils of tough texture are benefited by turning over to the weather, and the more of it that can be done now the more is spring work forwarded.

**Live Stock.**—The careful and humane farmer has no duty more imperatively pressing upon him than that of promoting the comfort and health of his farm stock. Horses should not only be well fed but regularly; and this regularity should also extend to their working and their cleaning. Especially after working on muddy roads should they be rubbed down, their legs dried, and sufficient bedding provided.

The best food at hand should now be given milk cows. We hope our readers have heeded our oft-repeated suggestion to grow succulent food in the form of sugar beets, mangels or ruta bagas, since they will add to the ordinary rations the quality of juiciness, at once tending to preserve health and promote the flow of milk. Do not let either cows or young stock run down early in the season. On this point the *National Live Stock Journal* remarks:

The great loss in the rearing of cattle results from bad management in the beginning. The calf does not get milk enough, and it is frequently put on poor grass; and by beginning of winter it is lean, paunchy and out of shape. It is then put on straw, corn fodder or hay, and in the spring, at the age of twelve months, it weighs less than a good calf should at four months. It has, besides, an unthrifty habit established, which usually continues through life. It will never be a good grower.

We wish to press the importance of this view of the case upon the attention of young farmers and breeders. Give attention to your calves. If well-managed and of good blood, no farm stock will make more profitable returns; while, if of a bad sort, and badly kept, nothing can be more unprofitable.

A few years since we met a friend just returned from *The East*, where he had been to wind up his hog trade for the year. "Well," said he, "I am now done with the hog shipping business; for two or three years I made money—a good deal of money; now it is all gone, and I must go back to where I started." "Where is that?" we asked. "I must begin again with a calf," said my friend; "if you get a good one, and manage him right, he will never fail you. Sometimes the profit is only moderate, but it is always sure." As we have said elsewhere, many yearling steers have

been sold this season at *fifty dollars per head*, and this has all resulted from the two important requisites of *good blood* and *generous keep* for the first twelve months of their lives.

Let us make the application. How do our calves look? Are they in good, thrifty, stout condition to begin the winter? If not, we should lose no time and spare no expense to make them so. Oats and corn ground together are, perhaps, the best feed. Shelled corn is very good, and young calves are very fond of it; to this may be added bran and shorts. If the calf is out of condition, or lousy, a little oil-cake with bran is excellent. To kill the lice nothing is better than plenty of lard or other grease, with a little petroleum—if the weather is cold we must use more petroleum, say one-half. The great point we wish to press in these observations is, that all stock should be kept growing in winter as well as in summer; that if it is not kept growing, the food it consumes brings us no return—is a dead loss—while if we add, say one-third or one-fourth to the expense, we have a profit on the whole. This is more especially true, and more strikingly illustrated in the keeping of young stock the *first winter*, than in any subsequent period.

Stabling for cows giving milk, as well as for horses, should be warm and well ventilated, but not air-tight.

Sheep need shelters for protection in storms of rain and snow, but at other times they are better in the fields. Give a little grain and bran occasionally, and see to it they are salted regularly. Ruta-bagas come in admirably now and at all times for sheep, but if they are not abundant it is better to keep them for ewes at lambing time, as they promote the flow of milk.

Fattening hogs, if not already fit for killing, should be pushed on as rapidly as possible. Be careful that they are kept clean and healthy. Supply regularly lime, ashes, charcoal and rotten wood, and plenty of pure water, and occasionally a little salt.

Poultry should have a good warm house, with a varied diet, especially not neglecting occasionally messes of vegetable food. Kitchen scraps, scalded bran, skim milk, &c., all help to keep up the supply of eggs.

**Manures and Composts.**—In cleaning up around the place lose no opportunity of collecting and saving materials appropriate for the compost heap, of which every farm furnishes at this season a great abundance. By mixing with manure and occasionally turning over these otherwise useless and even noxious materials, a large amount of plant food may be made ready for use, which would be otherwise wasted.

**Drains and Ditches.**—See that these are kept clean, and be especially observant of surface drains that they are unobstructed. This month frequently offers many opportunities for making ditches to advantage.

**Gates and Fences** ought to be looked to, and any needful repairs made.

### Maryland Horticultural Society.

The November show can hardly be claimed as a success. Whether or not it is because the schedule of prizes have been limited in flowers

exclusively to Chrysanthemums, the shows for that month have each year been very meagre in the offerings and the attendance. On the 15th, there were but two tables occupied,—one by Mr. Wm. H. Perot, with Chrysanthemums in pots and some handsome Orchids in bloom; and the other by cut Chrysanthemums from Mr. T. V. Brundige. Mr. W. D. Brackenridge had a plant of *Aralia japonica* in blossom. There were about 200 visitors during the evening.

The meeting of the Society was merely a formal one. The Executive Committee provided for a sub-committee to prepare a schedule of prizes for 1878.

It appeared, from a preliminary report of the Treasurer, that of the subscriptions to the fund for erecting the buildings for the accommodation of the Pomological Society, a considerable amount remained unexpended, and that the balance-sheet of the Society showed more favorably than is usual after the payment of the premiums and the expenses of the Fall exhibition.

### Short-Horns for Maryland.

The following sales have been made from the herd of Silas Corbin, of Paris, Ky., to citizens of Washington county, in this State, at the prices named:

**Cows and Heifers.**—Duchess of Patterson to Henry Zeller for \$112, Lida the Fourth to Louis Schnebly for \$200, Clara the Ninth to Chas. W. Humrichouse for \$122.50, Clara the Twelfth to H. B. Craig for \$59, Fancy the Fourteenth to Henry Zeller for \$105, Mollie Ball to Elwood McLaughlin for \$140, Nanny Patterson to H. B. Craig for \$76, Lute to H. Zeller for \$120, Lady Jane the Fourth to H. Roland for \$115, Fancy Saladin to J. G. Brown for \$98, Duchess to H. B. Craig for \$88, Duchess the Third to Henry Troupe for \$67, Fancy Saladin the Third to H. B. Craig for \$46, Pattie to Moses Whitson, Jr., for \$61, Maud to Wm. Strook for \$77, Lady Verde the Second to M. Snively for \$109, Lida to H. C. Loose for \$107, Vesta the Fourth to Moses Whitson for \$50.

**Bulls.**—Prince of the Manor to H. B. Craig for \$102.50, Roan Duke to D. Hoover for \$62, Gen. Tyner to Wm. T. Hamilton for \$104, General to James W. Troup for \$68.

The cattle were well distributed in Washington county.

### A Free-Martin Breeding.

Rigdon Huston, Blandinsville, Ills., sends to the editor of the *Short-Horn Herd Book*, who forwards it to the *Lice Stock Journal*, the following statement:

Lucy Hilldale (Vol. XVII.) was twinned with a bull. I had no idea of her ever breeding, and thought it unnecessary to give her and her twin as produce when I gave the produce of Tulip. I have had five free-martins calved within the last fifteen years, none of which ever came in heat but Lucy Hilldale, and she has come in heat regularly since she was old enough, when, as an experiment, I let the bull serve her. She was served twice, the last service being on the 27th day of November, 1876. On the 2d day of September, 1877, she dropped the very promising heifer calf 2d Lucy Hilldale (Vol. XVII.)



**Petun'a Grandiflora Fimbriata Flora pleno.**

Above we give a cut of this new Petunia, which was lately referred to in our pages. In the catalogue of the English house of Messrs. Hurst & Son, it is stated that this flower rivals in doubleness the Double Poppy, and emulates in color the richness and delicacy of the tints of the finest Carnations. Some of our American florists have also raised fringed varieties of this popular plant.

#### Heeling-In for Spring Plant'ng

The *Prairie Farmer* gives the following directions for heeling-in trees in the fall:

Select a dry place, and if possible of friable soil. Dig a trench to accommodate the roots of the trees, running east and west, and throw out the soil to the south, leaving the earth mellow at the bottom. In the trench place the roots of the trees, the tops to the south, and at the angle of about 25 or 30 degrees; pretty thick, but not so much so that they will seriously interfere with each other. Commence digging at the side of the trench, taking narrow spits, so the earth will pulverize kindly, and throw over the roots, filling the interstices thoroughly and firmly. If

the soil is dry, water the roots, and let the earth extend to a considerable degree up the stems, and even over the lower branches of the trees. So proceed, layer upon layer, until you have the whole properly covered, striking the earth firmly about the roots from time to time with the back of the spade.

Small plants, such as roses, should be heeled by themselves; and just after freezing weather the whole of the tops may be covered with earth, to be removed as soon in the spring as possible. Still smaller plants may be set upright on their roots, and a mound raised around and completely over them. Cuttings so treated will become calloused by spring, and often roots will have begun to be formed.

# The American Farmer.

PUBLISHED ON THE FIRST OF EVERY MONTH

By SAML. SANDS & SON,

At 128 W. Baltimore Street, (sign of the Golden Plow,) Baltimore, Md.

Wm. B. SANDS, Proprietor.

SAML. SANDS, { Editors and Publishers.  
Wm. B. SANDS, }

SUBSCRIPTION, \$1.50 a year, in advance. To Clubs of five or more, \$1.00 each. For \$10, eleven copies will be sent.

## ADVERTISING RATES.

	1 Mo.	3 Mo.	6 Mo.	1 Year.
One Square, 10 lines.....	\$ 1.50	\$ 4.00	\$ 7.00	\$ 12.00
Quarter Page.....	6.00	15.00	22.50	35.00
Half Page.....	12.00	25.00	40.00	70.00
One Page.....	30.00	45.00	75.00	120.00

Cover Pages subject to special contract.

Transient Advertisements payable in advance—all others quarterly.

Advertisements should reach us by the 27th of the month, to secure insertion in the succeeding issue.

DECEMBER 1, 1877.

## Closing of the Volume.

In bringing to a termination another volume of the *American Farmer* it is due to the numerous correspondents who have made its pages a vehicle for the exchange of useful experiences and views, and for the dissemination of correct information on the various branches of agriculture which they have treated, that we should acknowledge our own and our readers' indebtedness for the part which they have taken in the endeavor to stimulate improvement amongst their fellow-agriculturists.

We trust that in the coming year every department of farm work and life which is intended to be embraced in its scope may be enriched by continued contributions from them and from new correspondents, promising that on our part no effort shall be wanting to make our journal deserve the confidence and the favor it has enjoyed from so many of our most advanced and intelligent farmers, long numbered among its readers and friends.

We hope, too, that those friends to whose exertions in its behalf in making known to others the merits and claims of the *Farmer*, will actively press them anew upon the attention of their associates and neighbors, believing, as we honestly do, that there is no rural community but what will be benefitted materially and intellectu-

ally by its wider circulation therein. It will continue in the future to disseminate useful information for the tillers of the soil, and to serve as a medium for inter-communication between them on topics of their profession. It will not limit itself, however, to the mere discussion of routine matters pertaining to the processes of agriculture, but will examine according to their bearing on the interests of the great class engaged in that pursuit, all questions affecting its interest in any direction. Dedicated solely to the public welfare, having no private interest to serve aside from the legitimate business of its publication, the sympathy and support of all engaged in any branch of agriculture and horticulture in the section of country to which its field is mainly limited is solicited. With

## The New Volume.

Beginning with the January number, the great body of our subscriptions also begin, and we again appeal to every one of our friends to give us practical evidence of their interest in the *Old Pioneer*, by not only promptly forwarding their own annual renewals, but by accompanying them with the names of such new subscribers as may readily be secured in almost every neighborhood, if the effort is energetically made.

OUR TERMS FOR 1878, as heretofore announced, will be as follows:

One copy one year \$1.50; for five copies or more \$1 each. To clubs of ten at \$1 each, an extra copy will be sent free. In cases of scarcity of small currency, fractions of dollars may always be remitted in postage stamps; but we prefer that all subscriptions, when practicable, shall be forwarded by money order or registered letter, the cost of which is but a trifle, and entire security being thereby attained.

New subscribers sending in their names before January 1st, will receive the last three numbers of 1877, FREE.

## A Home or Fireside Department.

It is our purpose, with other improvements contemplated, to revive with our January issue the department for the ladies of the farmer's household, which for several years has been neglected in the *Farmer*. The suggestion comes to us from several quarters that to resuscitate it will meet with favor. We shall be glad to receive from our lady readers any assistance they can give us which will contribute to make it useful and interesting; and we especially solicit well-tested domestic recipes, suggestions for home comforts, adornments, &c.

### An Experiment Station and Fertilizer Control System for Maryland.

Those who advocate their erection on the assumption of great frauds being usual in the artificial fertilizer business in this State, commit, as we think, an error. We have no doubt that products of little merit under high-sounding names are occasionally put upon the market and find a moderate sale. So too from the heavy investment needed in the "plant," and the advantages large operators have over smaller ones, the latter may fail to produce products equalling in value or cheapness those of the former, and this is perhaps to be regretted; but, as we have heretofore taken the occasion to state, our own belief is, that this trade in Baltimore was never done in a fairer and more satisfactory way than at present. On this very account we believe the manufacturers would join in urging the establishment by the State of an institution such as we have under consideration. It would put the business on a footing of certainty; farmers would soon know what they want and what is offered them, and a spirit of assurance would take the place of doubt, which exists now with so many regarding artificial manures.

One important advantage in this system is the absence of legal compulsion. If any manufacturer or dealer in fertilizing materials does not wish to place his products under the supervision of the station, there is nothing to compel him. No farmer is under constraint to purchase only from those in relation with the station. Entire liberty exists, and it is only by mutual consent of all parties concerned that the benefits sought to be gained are secured to both sides.

There are other functions for the Station to perform beyond the supervision of the fertilizer business, although that will of necessity be at first the most pressing and the most important.

Examinations of the natural products of the State, whether for the purposes of the arts or of agriculture; analysis of our marls and other similar deposits; tests of the genuineness or adulteration of seeds; the settlement of questions as to the best modes of applying natural and commercial manures; determinations of the best mixtures of food for farm animals, with reference to the purposes for which they are kept; investigations into habits of and remedies for insect depredations;—these and others are among the appropriate subjects coming within the province of such a station to take hold of.

Another laudable effort which the Connecticut Station has undertaken and which deserves

imitation, is the stimulating of experiments by farmers themselves on their own soils. To facilitate this, it offers to furnish to a limited number of persons, willing to make such trials, sets of several fertilizers in small packages, accompanied by analyses, explanations, directions for using, and blanks for recording results. These experimental sets are furnished at actual cost, and afford one of the most satisfactory modes of enabling every farmer to test for himself, on his own land, vexed questions as to the fertilizers most appropriate to and most needed by it.

The cost, the method of control, and the situation of such an institution, deserve careful consideration.

The Connecticut Station, the only one in actual operation in this country, patterned on those of Europe, and the wonderful success of which has been heretofore referred to by us, was established in 1875 by the Legislature of that State, which appropriated twenty-eight hundred dollars a year for two years, to be expended under the direction of the Trustees of the University of Middletown,—the university tendering free use of its laboratories, &c., Mr. Orange Judd donating \$1,000 towards the payment of the expenses of the station, and another citizen of the State the free use of his farm and appliances, situated conveniently to the university. The Legislature of the present year increased the annual appropriation to \$5,000, and transferred the station to the Sheffield Scientific School of Yale College, where since July it has been in operation under the direction of the eminent chemist, Prof. S. W. Johnson. By the law of 1875 the station was exclusively under the control of the Trustees of the Middletown University; but under that now operative we are not sure how its work is directed, as we notice among the members of the Board of Control some who seem to hold *ex officio* positions—a plan seldom working satisfactorily.

In our State there is no educational institution—save one to which we will allude further on—which could supply, even if so disposed, the necessary facilities for the chemical work to be done; and this deficiency would require the equipment of a laboratory for the accommodation of the station. As at least two chemists would certainly be required, besides some other assistance, it would not be safe to assume the cost of maintenance at less than \$5,000 a year. The same sum would probably be a fair estimate of what is necessary for providing and fitting up a suitable laboratory and other rooms, with the moderate space of land suited for such series of soil-tests as might be instituted.



The appropriation by the Legislature of \$15,000, of which \$5,000 would be a permanent investment, might very reasonably be expected to save to the farmers of the State not less than \$150,000 a year, and probably from four to five times that amount.

To determine the plan of control best adapted to the efficient management of such a station is attended with some difficulties.


It is, however, above all things essential that the direction shall be in the hands of men disinterested and public-spirited; that the chemists and other officers shall be of unimpeachable personal character, and acknowledged scientific skill, and that the whole institution shall be removed from any connection with politics or politicians.

We await with much interest the action on this subject of the State Grange, as a body largely representing the agricultural classes, and its recommendation on the subject of the proper control of such a station, should the proposal for its erection receive its endorsement.

The best place, all things considered, for an experimental station in Maryland, seems to us to be in or near Baltimore city. The colleges in the State are all schools of letters rather than of science, and there would be no appropriateness in attaching it to any one of them. The very suggestion of the Agricultural College, as its home, would paralyze the scheme in its birth, unless that institution is itself re-modeled.

There is a great institution, however, of sufficient capacity, even in its temporary quarters, which might, if it would, give house-room for a few years to such an establishment, and which, by assuming its entire control and direction, the State supplying the funds for its maintenance, would raise it far beyond the reach of improper influence in appointments, and secure a guarantee of the highest scientific attainments being brought into service.

We refer to the Johns Hopkins University, whose president, Dr. Gilman, long connected with the Sheffield Scientific School, thoroughly understands the needs of the situation, and ought to be willing to give the aid of the new University here which he is moulding into shape, as his mother Yale is doing, to the important practical work of promoting the advance of that great class on whose prosperity the well-doing of all other classes depends.

 We have received a number of communications too late for this issue, which will appear in our next. This must prevent any other good things from coming forward.

### Captain Parker and the Agricultural College Debt.

We inquired in our October issue, in view of the fuss that had been made about it, whether the Agricultural College debt had been entirely paid, as claimed, and whether there were not a number of the old debts still standing, including an unsatisfied judgment, and whether the accounts of the Registrar had been audited by the board.

To the questions put, Captain Parker, under date of Oct. 24, gives the following answer through the *Maryland Farmer*:

1. That the present registrar was only elected on the 11th day of September last. The accounts of the retiring registrar were audited and the chairman of the committee (Mr. Whitman) made his report to the board of trustees on that day.

2. There has been no occasion to audit the accounts of the present registrar.

3. The only unsatisfied judgment I know of is a bill sent to the College by the editor of the *American Farmer*, and of which there was no record here. He has been informed that if the former president or registrar would certify to it, it would be paid.

4. There was a note due "of a larger figure." It was taken up on the 7th of this month with money paid us by the Comptroller of the State, and which was not given us until that time. All other notes were paid with the same money. This sum was very properly included in our assets by the registrar in his report of June last.

5. Advertising accounts due the journals of the State are being paid as fast as presented. The registrar has been forced to write to many editors to send their bills, as we find no record of them here.

6. We have no other old bills to pay that we know of.

Respectfully,

WM. H. PARKER, President.

To which we rejoin:

There is no need to attempt to confound the two registrars. Col. T. M. Jones was the officer referred to, he having held the position during the whole of Captain Parker's administration up to the time we wrote. He informed us himself on August 9th that his accounts had not been audited since he occupied it. We mention this to show that the trustees knew of the condition of the debt and the finances of the college only from his and the president's report,—not to reflect on Col. Jones.

Captain Parker knew perfectly well that we held no judgment against the college for the amount long due the *American Farmer* for advertising, and though he says there was "no record" of it, his registrar had more than twelve months before (August 23, 1876,) acknowledged it and promised its early payment by direction of the President; and also that the judgment to

which we referred was not satisfied until after our allusion to it, namely, on the 8th of October. This judgment was held by one of the first houses in this city, and we are informed that only a few weeks before its payment Captain Parker was notified that unless soon satisfied execution would issue against the college property. Captain Parker acknowledges the note to which we referred, as well as "all other notes," was not paid till October 7th, and that still other debts were unpaid when he wrote,—thus justifying the questions propounded.

In his report of June 6th to the trustees, he said, not that the assets were sufficient to pay the debts, but that "the college is now *entirely out of debt*, (having in two terms paid an old debt of \$13,274.33,) and *with a balance in our favor*."

Yet, as we ascertained, only by accident,—for we did not hunt up these facts,—that at the date of his report and up to the time we inquired about the matter, these debts certainly were still unpaid. Whether there were others we did not care and did not inquire.

In connection with Captain Parker's letter it will not be amiss to suggest that it would be difficult to find any authority of law for the payment by the Comptroller of any subsidies to this institution, after the action of the Legislature in striking them from the appropriation bills for the years 1876 and 1877.

The *Maryland Farmer* is not pleased with the manner in which we present subjects to public attention in our pages, and its indignation runs away with its discretion.

Let us suggest to it that its publisher, Mr. Ezra Whitman, possess his soul in patience. We never "insinuated," or even suspected, that it is he who runs the Agricultural College. On the contrary, we rather conclude the college runs him, from his promptness in dismissing, as we hear was the case, in compliance with a demand from there, his late editor who had the independence to state the truth about that military-naval scientific-agricultural institution.


The reference in our October issue to the experiments there made was to expose their crudity, puerility and uselessness, and if a verbatim quotation of the professor's own words—the only conceivable object of the kind of experiments aimed at being comparison—shows that on the wheat all the fertilizers used were from one dealer, and that the only one used on the potatoes were from the same individual, then the character of the transaction was sufficiently illustrated, even had we made no comment.


If "Mr. E. B. Whitman's business is entirely separate from Mr. E. Whitman," a statement we do not dispute, knowing nothing about it, and it not being germane to the subject we were discussing, it does not affect the fact that the latter has frequently, if not regularly, sold the college its supplies of fertilizers, implements, &c., while he occupied the fiduciary position of a trustee, and was serving during a part of the time at least, not only on the committee ordering the purchases, but also on the one passing upon the bills; and that this, probably in his estimation only a shrewd stroke of business, seems to the "unsophisticated," exceedingly irregular, indecorous and improper. The affectation of surprise that in one instance he should be charged (which he was not) with selling its goods really sold by his son, is a characteristically artless but ineffectual way of diverting attention from the many where he was less indirectly concerned.

#### Death of S. Sands Mills.

Col. S. Sands Mills, who died on the 13th ultimo, was the nephew of the senior editor of this journal, and was brought up in his family and office. He was a partner in the publication of the *Rural Register* and in the office in which the *American Farmer* was printed. Some years ago he begun a publication entitled the *Farmer and Mechanic*, afterward changed to the *Maryland Farmer*; but his connection with the latter has been for some time, we believe, only a nominal one.

At the time of his death Col. Mills was Sheriff of Baltimore city and also a member-elect of the Maryland House of Delegates. He had previously held a number of other public positions of responsibility; and a tribute to his great popularity and his many social virtues was seen in the vast outpouring of the people of the city at his obsequies,—the funeral being more largely attended, it is believed, than any which ever took place in Baltimore, the streets along the route of its procession being lined with attentive and respectful spectators.

 We have had shown to us a specimen of the jewelry advertised in our supplement. It is attractive in appearance and design, and, as it is distinctly stated to be plated, no one will probably be disappointed in purchasing it.

 Those who have never used them can know nothing of the comfort secured in country houses, by the use of weather strips to exclude drafts. Those offered in the advertisement elsewhere in this number are claimed to be the best and most durable made.

## The Tramp Nuisance.

A circular has been issued by a committee of the Prisoners' Aid Society, expressing its sympathy with the people of Maryland in the tramp pest, and inviting delegates from the different counties of the State to a "State convention," to consist of the State's attorneys and various county officers, as well as State boards of health, and local committees and others interested in the matter, to be held in this city on the 20th and 21st of December, to consider the best practical method of ridding the State of this nuisance upon the agricultural community, and uniting upon a suitable bill to be submitted to the Legislature at its coming session for that purpose, and also to consider the subject of our jail and almshouse system generally.

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## Baltimore Markets—December 1.

Quotations given below are Wholesale Prices.

**Breadstuffs.**—Flour—Quiet. We quote Howard Street Super \$4.25@4.75; do. Extra \$5.35@6; do. Family \$6.25@7.35; Western Super \$4@4.75; do. Extra \$5@6; do. Family \$6.25@7. City Mills Super \$4@4.50; do. standard Extra \$5.50@6; do. Rio brands Extra \$7@7.25; Spring Wheat Flour \$5.75@6.50; do. Patent \$7@8; Family brands \$5.50; Fine \$5.50@6.75; Rye Flour \$3.75@4; Corn Meal, City Mills \$1.15@1.30; do. Western \$1.15@1.30.

**Stocks when Meat.**—New York \$3@3.25; Pennsylvania \$2.75 @ 100 lbs.

**Wheat.**—Southern receipts light and dull; Western firm and active. We quote Southern red, ordinary to good \$1.20@1.35; do. Fultz \$1.40@1.45; do. amber, long-berried \$1.40@1.50; Western No. 3 red, do. \$1.34; do. No. 2 do. \$1.42@1.48; do. do. do. Jan. do. \$1.44@1.44½.

**Corn.**—Dull. We quote Southern white, new 55@62 cents; do. yellow do. 55@62 cents; Western steamer, spot 56½ cents; do. mixed, spot, old 64½@64½ cents; do. Dec. do. 63½ cents; do. spot, new 63½ cents; do. Dec. do. 61½ cents; do. Jan. do. 60½@60½ cents.

**Oats.**—Steady and firm. We quote Western mixed 36@37 cents; do. bright 38 cents; Southern, fair to good 35@37 cents; do. prime 38@39 cents.

**Rye.**—Light movements. We quote nominally good to prime at 65@65 cents ½ bushel.

**Hay and Straw.**—In steady demand for each, with liberal supplies, but prices are unchanged, and we still quote as follows, viz: Hay—Cecil County \$16@17; do. prime Pa. and Md. \$14@16; do. Western \$13@15; do. Mixed \$12@14; do. Clover \$12. Straw—Wheat \$7@8; do. Oat \$9; do. Rye \$13.

**Cotton.**—Quiet and steady. We quote: Middling 10½ cents; Low Middling 10½@10½ cents; Strict Good Ordinary 10½@10½ cents; Good Ordinary 10½ cents.

**Provisions.**—Demand moderate. We quote: Bulk Shoulders, packed, new, 6½ cts.; do. C. R. Sides, do., do., 7½ cts.; do. L. C. Sides, do., do., 7½ cts.; Bacon Shoulders, do., 8½ cts.; do. C. R. Sides, do., 9½ cts.; do. Hams, sugar-cured, 12½ cts.; do. Shoulders, do., 8 cts.; do. Breasts 10 cts.; Lard, Refined, tins, 9½ cts.; Mess Pork, ½ brl., \$14.25.

**Live Stock.**—Beef Cattle—Stocks light and market slow. We quote as follows: Best Beeves \$5.25@6.00; first quality \$4.25@5.25; medium or good fair quality \$3.90@4.25; ordinary thin Steers, Oxen and Cows \$3@3.50; extreme range of prices \$3@6; most sales were from (½ 100 lbs.) \$3.50@4.75.

**Swine.**—Light run; quote 5½@6 cts. ½ lb. net.

**Sheep.**—Receipts light; quote butcher Sheep 3½@4½ cts. ½ lb. gross; fat Sheep 5 cts. ½ lb.

**Butter.**—Active demand for fine grades. N. Y. State 28@30 cts.; Western choice fresh 21@22 cts. (Cheese)—Eastern, good to choice new, 13@13½ cts.; Western do. 11½@12½ cts.

**Eggs.**—Fresh 22@23 cts.; pickled 17@18 cts.

**Poultry.**—Old Chickens \$2.75@3.00; young do. \$1.50 @ \$2.00 ½ doz. Dressed Turkeys 10@11 cts. ½ lb.

**Tobacco.**—The demand for leaf is still confined principally to good and fine selections, which are very scarce; but the common sorts, of which the stock here is mainly composed, continue very dull. Good grades are, however, readily salable at satisfactory prices, but there is no general or regular demand at present. Nominal quotations are as follows: Maryland inferior and frosted \$1.50@2; do. sound common \$2@2.50; do. good do. \$4.50@6.50; do. middling \$6.50@7.50; do. good to fine red \$3@10; do. fancy \$10@15; do. upper country \$4@50; Ohio inferior to good common \$2@3.50.

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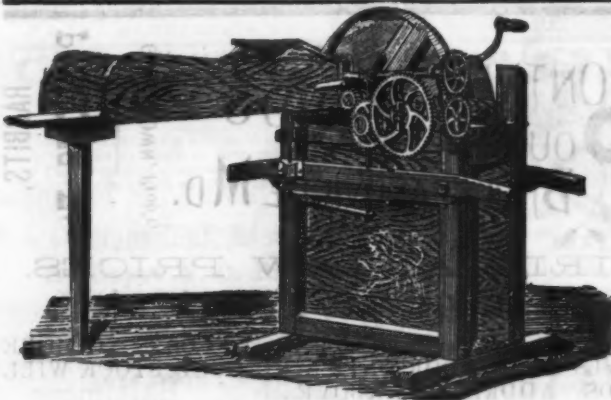
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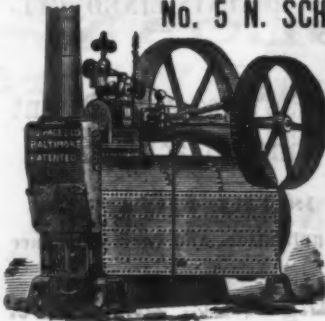
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